

For Reference

NOT TO BE TAKEN FROM THIS ROOM

For Reference

NOT TO BE TAKEN FROM THIS ROOM

Ex LIBRIS
UNIVERSITATIS
ALBERTAENSIS



1965 (1)
200

THE UNIVERSITY OF ALBERTA

A COMPARATIVE AND CROSS-SECTIONAL STUDY OF
ATTITUDES OF PROSPECTIVE TEACHERS

by

EUGENE WILLIAM RATSOY

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

EDMONTON, ALBERTA

OCTOBER, 1965

UNIVERSITY OF ALBERTA
FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "A Comparative and Cross-Sectional Study of Attitudes of Prospective Teachers," submitted by Eugene William Ratsoy in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Date

October 6, 1965

ABSTRACT

The study reported in this thesis investigated attitude differences among Education students at various stages of teacher preparation. In addition, an attempt was made to compare the attitudes of seniors in two alternate teacher education programs. Data for the study were obtained largely during the 1964-65 winter session from 1983 prospective and experienced teachers enrolled in the Faculty of Education at the University of Alberta, Edmonton. Differences were sought on six variables, namely, (1) Thinking Introversion (TI) which measures expressed interest in a wide variety of areas and preference for reflective thought, (2) Social Introversion (SI) which assesses attitude toward seeking and gaining satisfaction from social contacts, (3) Theoretical Orientation (TO) which assesses interest in scientific activity and preference for using the scientific method in thinking, (4) Estheticism (Es) which measures interest in artistic matters and activities, (5) the Education Profession Aspiration Scale (EPAS), which measures level of occupational aspiration within the Education profession, and (6) the Education Profession Attitude Questionnaire (EPAQ) which measures attitude toward expressed policy statements of the Alberta Teachers' Association.

Education students classified by social category, particularly by sex of respondent, differed significantly on a majority of the variables. Men typically scored higher than women on TO, EPAQ and EPAS; women typically scored higher on Es. Differences on social categories age, marital status and subjective socio-economic status appeared less consistent.

Although all three classifications of membership groups related to teacher education program revealed significant differences in attitude scale means, the ones based on subject matter field of concentration and prospective teacher--experienced teacher classifications produced the most consistent differences. Curriculum major yielded significant attitude differences for females but not for males.

Of the three variables on which prospective teachers classified by academic proficiency differed, only TI revealed progressive increase in means as academic achievement increased. For females but not for males there was also a progressive increase in EPAS means.

Categories of Education positions aspired to appeared to be meaningful classifications for research purposes in that significant differences were found on three of the five variables used in testing for differences between categories.

The cross-sectional study revealed significant differences between years on all variables except Es for the entire sample. Of the sample anticipating four years of pre-service education, succeeding years scored higher TI and EPAQ means and lower SI means. There were no significant differences in variances between years.

Three variables discriminated between degree holders and Education seniors; degree holder mean scores on SI and TO were higher; Education seniors scored higher on EPAQ.

From the results of the analyses it was concluded that there were significant attitude differences between freshman, junior, sophomore and senior Education students and that prospective teachers completing alternate programs of teacher preparation differed in attitudes.

ACKNOWLEDGEMENTS

This study depended to a considerable extent upon the cooperation and assistance of many individuals and agencies. The writer wishes to thank the supervisor of the thesis, Dr. Miklos, for reading drafts of the thesis with dispatch and for the invaluable assistance he offered during the period of the study. Thanks are also extended to the committee members, Dr. Reeves, Chairman of the Department, Dr. Worth, and Dr. Baird.

Appreciation is expressed to the Dean of the Faculty of Education, to the department heads and to instructors of the participating classes for the confidence in the usefulness of research of this type which they demonstrated by permitting the instruments to be administered during a regular class period. Thanks are due to the teachers and prospective teachers who participated in the study and to the writer's colleagues who assisted in gathering the data.

The writer wishes to acknowledge with gratitude the financial assistance received from the University of Alberta, the W. K. Kellogg Foundation, the Canadian Education Association, the Alberta Teachers' Association and the Province of Alberta.

To Dr. Paul Heist and the Center for the Study of Higher Education, Berkeley, appreciation is expressed for permission to reproduce four instruments used in the study.

Finally, and most of all, the writer wishes to express sincerest appreciation to his wife and family for their patience, encouragement, and assistance.

TABLE OF CONTENTS

CHAPTER	PAGE
<p>I. DEFINITION OF THE PROBLEM</p> <p style="padding-left: 40px;">Problem, 1; Statement of the Problem, 1; Importance of the Study, 2; Definition of Terms Used, 3; The Sub-Problems, 7; Assumptions, 7; Limitations, 8; Delimitation, 9; References for Chapter I, 10.</p>	1
<p>II. CONCEPTUAL FRAMEWORK</p> <p style="padding-left: 40px;">Reference Group Theory and Attitude Formation, 16; Definition and Significance of the Concept, 16; Formation and Significance of Group Norms, 18; Multiple Group Affiliation, 20; Anticipatory Socialization, 23; Influence of Reference Groups on Attitudes, 26; Reference Group Theory and Occupational Status, 28; Summary and Implications for Present Study, 35; Statement of Hypotheses, 37; References for Chapter II, 39.</p>	12
<p>III. REVIEW OF THE LITERATURE</p> <p style="padding-left: 40px;">Personality Variables and Membership Group Classifications, 41; Differences Among Curricular Groupings and Subject Matter Fields of Practicing Teachers, 41; Differences Among Curricular Groupings and Subject Matter Field Groups of Teaching Candidates, 46; Differences Among Teacher Groups Pursuing Different Preparation Programs, 47; Personality Variables and Social Category Classifications, 51; Male-Female Differences Among Practicing Teachers, 52; Male-Female Differences Among Teaching Candidates, 53; Differences Among Classifications Based on Marital Status, 54; Differences Among Classifications Based on Age, 55; Differences Among Classifications Based on Social Background of Teachers, 56; Personality Variables and Classifications Based on Academic Proficiency, 57; Personality Variables and Classifications Based on Category of Position Aspired to, 59; Personality Variables and Classifications Based on Time Spent in Pre-Service Teacher Education, 60; Attitude Change Among College Students, 60; Attitude Changes Among Future Practitioners in Professional Preparation Programs, 63; Longitudinal Studies of Attitude Change Among Prospective Teachers, 66; Literature Related to the Development of the Education Profession Aspiration Scale, 67; Summary, 75; References for Chapter II, 77.</p>	41
<p>IV. INSTRUMENTATION AND METHODOLOGY</p> <p style="padding-left: 40px;">Instrumentation, 80; General Information Questionnaire, 80; The Omnibus Personality Inventory, 80; The Education Profession Aspiration Scale, 83; The Education Profession</p>	80

Attitude Questionnaire, 84; Methodology, 85; Procedure, 85; Testing the Hypotheses, 85; The Sample, 86; Distribution of Sample, 87; Description of Sub-Sample Having No Teaching Experience, 89; Description of Sub-Sample with Teaching Experience, 92; Overview of the Analysis, 94; References for Chapter IV, 97.

- V. DEVELOPMENT OF THE EDUCATION PROFESSION ASPIRATION SCALE . . . 98
 The Education Profession Prestige Scale, 100; The NORC Method, 100; The Torgerson-Thurstone Method, 102; Description of the Education Profession Aspiration Scale, 109; References for Chapter V, 113.

VI. ANALYSIS AND RESULTS: DIFFERENCES BETWEEN SUB-GROUPS

OF EDUCATION STUDENTS 114
 Attitude Differences Between Social Categories of Education Students, 115; Hypothesis 1.1, 115; Hypothesis 1.2, 120; Hypothesis 1.3, 122; Hypothesis 1.4, 124; Summary and Conclusion, 127; Attitude Differences Between Membership Groups of Education Students, 129; Hypothesis 2.1, 129; Hypothesis 2.2, 134; Hypothesis 2.3, 140; Conclusion, 142; Attitude Differences Between Classifications Based on Academic Achievement, 144; Hypothesis 3, 144; Conclusion, 148; Attitude Differences Between Education Students Classified by Category of Positions Aspired To, 149; Hypothesis 4, 149; Conclusion, 152; Results of Tests of Hypothesis 2, 152; Results of Tests of Hypothesis 3, 153; Results of Tests of Hypothesis 4, 153; References for Chapter VI, 154.

VIII. ANALYSIS AND RESULTS: DIFFERENCES BETWEEN FRESHMAN, JUNIOR,

SOPHOMORE AND SENIOR TEACHING CANDIDATES 155
 Attitude Differences Between Teaching Candidates Classified by Anticipated Length of Preparation Program, 155; Hypothesis 5.1, 155; Attitude Differences Between Freshman, Junior, Sophomore and Senior Teaching Candidates, 160; Hypothesis 5.2, 160; Variance Differences Between Freshman, Junior, Sophomore and Senior Teaching Candidates, 168; Hypothesis 5.3, 168; Summary and Conclusion, 173.

VIII. ANALYSIS AND RESULTS: DIFFERENCES BETWEEN TEACHING CANDIDATES

IN TWO ALTERNATE TEACHER PREPARATION PROGRAMS 176
 Attitude Differences Between Seniors in Two Teacher Preparation Programs, 176; Hypothesis 6, 177; Summary and Conclusion, 182.

CHAPTER	PAGE
IX. SUMMARY, CONCLUSIONS AND IMPLICATIONS	183
Summary of the Study, 183; The Problem, 183; Instrumen- tation and Methodology, 184; The Sample, 185; Results, 185; Conclusions, 188; Implications, 192; Implications for Teacher Education and the Education Profession, 193; Implications for Further Research, 196.	
BIBLIOGRAPHY	199
APPENDICES	206

LIST OF TABLES

TABLE	PAGE
I. Summary of Education Position Rankings in Six Studies of Occupational Rankings	72
II. Education Positions Ranked in Order of Importance . . .	73
III. Distribution of Sample by Route, Program and Year . . .	88
IV. Distribution of Sub-Sample With No Teaching Experience by Route, Program, Year, and Sex	90
V. Distribution of Sub-Samples Used in Testing Majority of Hypotheses (Elementary and Secondary Routes, No Teaching Experience)	91
VI. Distribution by Sex of Sub-Sample Having No Teaching Experience Anticipating Four or More Years of Pre-Service Preparation Before Teaching	92
VII. Distribution of Sub-Sample With Teaching Experience by Route, Program, Year, and Sex	93
VIII. Raw Score and Standardized Means and Standard Deviations for Four OPI Scales, EPAQ, and Five EPAS Items	95
IX. Raw Frequency Matrix of Education Positions Ratings . .	101
X. Ranking of Education Positions by Education Seniors and by Education Graduate Students	105
XI. Education Profession Prestige Scale Rankings and Scale Values	108
XII. Pearson Product-Moment Intercorrelation Matrix of Five Education Profession Aspiration Scale Items	111
XIII. Test-Re-Test Reliability Coefficients on EPAS Items Calculated on Freshman Sub-Sample Scores after Six Month Time Interval	112
XIV. Basic Data for the Tests of Attitude Differences Between Teaching Candidates Classified by Sex of Respondent. .	116
XV. ESAI Means for the Tests of Attitude Differences Between Elementary Teaching Candidates Classified by Sex of Respondent	118

TABLE	PAGE
XVI. ESAI Means for the Tests of Attitude Differences Between Secondary Teaching Candidates Classified by Sex of Respondent	118
XVII. Basic Data for the Tests of Attitude Differences Between Teaching Candidates Classified by Marital Status . .	121
XVIII. Basic Data for the Tests of Attitude Differences Between Education Students Classified by Age of Respondent .	122
XIX. Basic Data for the Tests of Attitude Differences Between Teaching Candidates Classified by Subjective Socio-Economic Status	125
XX. Significance of <u>F</u> Ratios Related to Hypotheses Based on Social Categories of Teaching Candidates	128
XXI. Basic Data for the Tests of Attitude Differences Between Teaching Candidates Classified by Curriculum Major .	130
XXII. Basic Data for the Tests of Attitude Differences Between Experienced Teachers Classified by Curriculum Major.	130
XXIII. Basic Data for the Tests of Attitude Differences Between Prospective Teachers Classified by Subject Matter Field of Concentration	135
XXIV. Basic Data for the Tests of Differences in Attitudes Between Male Teaching Candidates Classified by Subject Matter Field Major	138
XXV. Basic Data for the Tests of Differences in Attitudes Between Female Teaching Candidates Classified by Subject Matter Field Major	139
XXVI. Basic Data for the Tests of Attitude Differences Between Experienced and Prospective Teachers	141
XXVII. Basic Data for the Tests of Attitude Differences Between Prospective Teachers Classified by Self-Reported Level of Academic Success	145
XXVIII. Basic Data for the Tests of Differences in Level of Aspiration Between Prospective Male and Female Teachers Classified by Self-Reported Level of Academic Success	147

TABLE

PAGE

XXIX.	Basic Data used in Testing for Attitude Differences Between Education Students Classified by Category of Education Position Aspired To	150
XXX.	Basic Data for the Tests of Attitude Differences Between Teaching Candidates Classified by Number of Years of Pre-Service Education Anticipated . . .	156
XXXI.	Basic Data for the Tests of Attitude Differences Between Teaching Candidates in their Final Years of Pre-Service Education Classified by Year of Preparation	157
XXXII.	Basic Data for the Tests of Attitude Differences Between Freshman Teaching Candidates Classified by Number of Years of Pre-Service Teacher Education Anticipated	159
XXXIII.	Basic Data for the Tests of Attitude Differences Between Freshmen, Junior, Sophomore and Senior Teaching Candidates	162
XXXIV.	Basic Data for the Tests of Attitude Differences Between Freshman, Junior, Sophomore, and Senior Teaching Candidates Anticipating Four or More Years of Pre-Service Education	163
XXXV.	Basic Data for the Tests of Differences Between Freshman, Junior, Sophomore, and Senior Male Teach- ing Candidates Anticipating Four or more Years of Pre-Service Education	165
XXXVI.	Basic Data for the Tests of Differences Between Freshman, Junior, Sophomore, and Senior Female Teaching Candidates Anticipating Four or more Years of Pre-Service Education	166
XXXVII.	Comparison of Variances Between Freshman, Junior, Sophomore, and Senior Teaching Candidates in Three Subject Matter Field Groups	170
XXXVIII.	Basic Data for the Tests of Differences in Attitudes Between Subject Matter Field Majors	172
XXXIX.	Basic Data for the Tests of Attitude Differences Between Education Seniors in Two Alternate Programs	178
XL.	Proportions, Totals and Rankings of Education Positions Prestige Ratings	213

CHAPTER	PAGE
XLI. Cumulative Frequency Matrix of Education Positions Prestige Ratings	215
XLII. Cumulative Proportion Matrix of Education Positions Prestige Ratings	217
XLIII. Matrix of Transformations of Education Positions Prestige Ratings to the Normal Distribution Curve . .	219
XLIV. Matrix of Scale Values for Education Positions	221

CHAPTER I

DEFINITION OF THE PROBLEM

Since the turn of the century, teacher personality has been the object of extensive research in education (1,5,6). The teacher's personality is a significant variable in the classroom; it may be the most significant variable (7, p. 506). Various aspects of teacher personality have been studied. Among these are cognitive ability, and a large number of motivational variables, namely, values, interests and favored activities, adjustment and needs, personality factors, and personality as measured by projective techniques (7, pp. 506-576). An individual's attitudes constitute another set of variables. The attitudes of practicing and prospective teachers have also been subject to scrutiny and evaluation. A set of teacher attitudes, especially the attitudes of prospective teachers, is the focus of the present study.

I. THE PROBLEM

Statement of the Problem

The purpose of this study was to determine the presence of differences in attitudes between selected groups of students pursuing a four-year teacher education program and to identify a number of sources of influence on these attitudes. Secondly, the purpose was to compare the attitudes of prospective teachers completing two alternate programs of teacher preparation, and to account for any differences in attitudes.

The major problem involved a study of attitude change by means of comparing cross-sectional samples from each of the four years in one of these programs, and from the final pre-service year in the other. The cross-sectional samples served as bases for an analysis of the (1) extent, (2) rate, and (3) direction of attitude changes in Education students in general, and more specifically, within selected membership group sub-samples. Furthermore, the study attempted to identify sources of influence on these attitudes, based on statistical tests of hypotheses stated in Chapter II.

Importance of the Study

Teacher education has recently become a target of critics of public education. Some would lay on the doorstep of colleges and faculties of education the blame for most educational ills. Typical of criticisms leveled at teacher preparation programs are those of Neatby (13), Rickover (14), Conant (3), and Koerner (9). Many of the recommendations made by these writers are based on their subjective appraisals of present conditions in education. Few are founded on empirical evidence. Both Conant (3, p. 209) and Koerner (9, p. 1), for example, concede that their proposals for change in teacher education rest on little proof in the way of objective data. Noting the paucity of such data, Coutts has called for cross-sectional and longitudinal research in the growth of teachers in their professional roles (4, p. 8).

Elizabeth Maccia draws attention to the need for more extensive teacher education research. She suggests that the "bounds of teacher education research" cannot be stretched merely by summarizing all the

confirmed lower-order generalizations that have to date been assimilated. Such an approach would inevitably lead to a "closed systems" method cutting off the production of further knowledge (10, p. 11). Instead, she proposes that these "bounds" be stretched by means of educational theorizing through models. In this way, the ". . . production and unification of the knowledge of. . . teacher behavior as an integral part of human behavior within the institutional setting of the school. . ." may be accelerated (10, pp. 4-6).

The present study may partially fulfil the above two needs. It serves as a test for the empirical application of reference group theory to teacher education research, and it provides cross-sectional data on the professional growth of teachers during pre-service preparation, thereby adding to the limited body of knowledge on teacher education.

In addition, the study might establish base-line data for future longitudinal studies. It may also have indirect relevance to occupational counselling, although it is not specifically designed for the latter prupose.

II. DEFINITIONS OF TERMS USED

Academic proficiency. Cumulative university average, or grade XII average for students in their first year at university, is taken in the present study to be a global measure of academic proficiency.

Attitude. Murray reasons that man's personality is a system of integrated attitudes, ". . . each of which is a relatively permanent disposition to evaluate some entity negatively or positively. . ." (12,

p. 453). Thurstone defines the concept attitude as ". . .the sum total of a man's inclinations and feelings, prejudice or bias, preconceived notions, ideas, fears, threats, and convictions about any specific topic . . ." (16, p. 216). In this study the concept attitude will mean the verbal expression of one's attitudes as defined above, delimited to those attitudes measured by the Education Student Attitude Inventory (ESAI attitudes), namely, Thinking Introversion, Social Introversion, Theoretical Orientation, Estheticism, Education Profession Attitude Questionnaire, and Education Profession Aspiration Scale. A detailed description of the six scales and of the attitudes measured by them is included in Chapter IV.

Category of Education positions aspired to. Part of the analysis of data required converting responses to the Education Profession Aspiration Scale to category numbers representing the following categories of Education positions: (1) Classroom teaching; (2) Supervision of classroom teachers; (3) Administration; (4) Counselling; (5) Research; and (6) Services.

Curriculum major. Education students must elect an elementary, secondary or vocational curriculum major depending on their preference for teaching in the elementary or secondary grades or for teaching vocational courses.

Level of Education profession aspiration. The level of Education profession aspiration (LEPA) is an index corresponding to the rating the aspired to Education position has on the Education Profession

Prestige Scale (EPPS). It is a measure of occupational aspiration.

Reference group. One's reference groups are those groups that serve to influence one's attitudes, aspirations and behavior. A majority of these are likely to be membership groups, that is, groups to which one belongs and of which he is an active member. The Education student's family, community, teacher education group, subject matter field group, and peer group are his membership reference groups. Social categories also serve as membership reference groups for an individual.

In addition, since Education students are aspiring to membership in the teaching profession, the teaching profession--extending far beyond face-to-face contact in a given time and space--acts as a non-membership reference group. Preparation for membership in the non-membership group is both formal and informal. The formal didactic component is provided by the teacher education program. The informal part is acquired collaterally and often unwittingly by means of anticipatory socialization.

Since reference group processes are basic to the theory presented in Chapter II, a more detailed description is withheld at this time.

Role. The definition of role used in the present study is the one given by Sherif and Sherif. They define role as, "the expected behavior of a given individual role incumbent in the scheme of established reciprocities of a group" (15, p. 162).

Social category. A social category differs from a social group in

that in the former there may be little or no interaction between the occupants of the established statuses (11, p. 285). An age group, a marital status, a social class, are examples of social categories.

Social group. For purposes of the present study, Benoit-Smullyan's definition of social group is appropriate. He defines a social group as all the persons who possess a common characteristic by which they are distinguished by society from other persons. This definition focuses on the reaction of the rest of society to the group, rather than the reaction of the group members to one another. He adds that the group may be ". . . socially distinguished by any common characteristic except status and locus. . ." (2, p. 153). All teachers collectively constitute a group, science teachers constitute another group, and Education students in an elementary reading major also constitute a group.

Status. Repeated interaction over time of individuals who have common goals and motives gives rise to a group structure consisting of roles and hierarchical statuses. A status is a "differentiated position" in the hierarchy of positions in the group, having meaning in relation to other positions in the hierarchy (15, p. 162).

Subjective socio-economic status. A global self-report of the socio-economic level of one's family in relation to the families of other university students is a subjective measure of socio-economic status.

III. THE SUB-PROBLEMS

Stemming from the major problem are several researchable sub-problems. They include the following:

1. What relationship exists between selected social categories of prospective teachers and the attitudes they express?
2. What relationship exists between teaching candidates' membership groups and attitudes of these candidates?
3. What relationship exists between academic proficiency of prospective teachers and their attitudes?
4. What relationship exists between category of positions aspired to and the attitudes of prospective teachers?
5. What relationship exists between length of anticipatory socialization to the profession and the attitudes of prospective teachers?
6. What relationship exists between type of preparation program pursued by prospective teachers and their attitudes?

IV. ASSUMPTIONS

1. It is assumed that the use of the questionnaire method did not seriously restrict the extent to which the results respecting the (a) magnitude, (b) direction, and (c) rate of attitude change may be generalized.
2. It was assumed that participating Education students possessed the knowledge and insight necessary to accurately complete the instruments in the study.
3. It was assumed that the Omnibus Personality Inventory

possessed a degree of reliability and validity suitable to an Alberta study.

4. External influences are assumed not to have changed appreciably during the past four years.

5. It was assumed that the cross-sectional samples were drawn from the same population enabling valid comparisons between years.

V. LIMITATIONS

1. The cross-sectional comparisons, particularly between the second, third and fourth year teaching candidates, are subject to a limitation. Many of these candidates leave their teacher preparation school to accept positions as teachers before completing degree requirements. This is particularly true of women in the elementary curriculum major.

2. Since an attitude is an hypothetical or latent variable rather than an immediately observable variable, it must be realized that a person's attitudes are simply indicators of his behavior, and that the inculcation of "better" attitudes by formal or informal means may not produce any change in behavior. As Green cautions,

. . . It is very important not to overgeneralize. From a sample of verbal responses to questions about opinions, one should not make inferences about behavior other than verbal responses to similar questions. It may be that responses to these verbal questions are correlated with responses in nonverbal situations, but this must be determined experimentally (8, p. 336).

Since attitudes are not necessarily the equivalent of overt behavior, and since the present study makes no attempt to correlate expressed attitudes with behavior, a limitation is imposed on the degree

to which the findings of the study may be generalized.

VI. DELIMITATION

1. Only Faculty of Education students enrolled in the 1964-1965 regular session are contained in the sample studied.

2. Only information obtained from responses to the six attitude scales was analyzed.

3. No attempt was made to identify and delineate the attitudes that are essential to teaching and to other educational services. The focus instead was on the differences in selected attitudes resulting from varying amounts of exposure to a professional preparation program.

REFERENCES FOR CHAPTER I

1. Barr, A. S. "The Measurement and Prediction of Teaching Efficiency: A Summary of Investigations," Journal of Experimental Education, XVI (June, 1948), 203-283.
2. Benoit-Smullyan, Emile. "Status, Status Types and Status Interrelations," American Sociological Review, IX (April, 1944), 151-161.
3. Conant, James Bryant. The Education of American Teachers. New York: McGraw-Hill Book Company, Inc., 1963.
4. Coutts, H. T. "The Future of the Teaching Profession," The ATA Magazine, XLII (October, 1961), 6-12, 48,49.
5. Domas, S. J., and D. V. Tiedeman. "Teacher Competence: An Annotated Bibliography," Journal of Experimental Education, XIX (December, 1950), 101-218.
6. Gage, N. L., editor. Handbook of Research on Teaching. Chicago: Rand McNally & Co., 1963.
7. Getzels, J. W., and P. W. Jackson, "The Teacher's Personality and Characteristics," Ch. XI in N. L. Gage, editor, Handbook of Research on Teaching. Chicago: Rand McNally & Co., 1963, pp. 506-582.
8. Green, Bert F. "Attitude Measurement," Handbook of Social Psychology, Vol. I, Gardner Lindzey, editor. Cambridge, Mass.: Addison-Wesley Publishing Company, Inc., 1954, pp. 335-369.
9. Koerner, James D. The Miseducation of American Teachers. Boston: Houghton Mifflin, 1963.
10. Maccia, Elizabeth Steiner. Educational Theory Models: A Possible Way to Stretch the Bounds of Teacher Education Research. Occasional Paper 64-162. Columbus, Ohio: Educational Theory Center, The Ohio State University, 1964.
11. Merton, Robert K. Social Theory and Social Structure. Glencoe, Ill.: The Free Press, 1957.
12. Murray, Henry A. "Toward a Classification of Interactions," Toward A General Theory of Action, T. Parsons and E. A. Shils, editors. Cambridge, Mass.: Harvard University Press, 1962.
13. Neatby, Hilda. So Little for the Mind. Toronto: Clarke, Irwin, 1953.

14. Rickover, Hyman. Education and Freedom. New York: E. P. Dutton & Co., 1959.
15. Sherif, Muzafer, and Carolyn W. Sherif. An Outline of Social Psychology. Revised edition. New York: Harper and Row, 1956.
16. Thurstone, L. L. The Measurement of Values. Chicago: The University of Chicago Press, 1959.

CHAPTER II

CONCEPTUAL FRAMEWORK

The process of socialization through which individuals are inducted into their culture, involving the acquisition of attitudes and values, of skills and behavior patterns appropriate to their social roles in society has long been studied, especially socialization in the early years of the individual. In a like manner, socialization into the occupational group has more recently come under scrutiny by those interested in the sociology of work,¹ as well as by those professional groups interested in the changes that take place from the time the novice first enters his professional preparation school until he is finally inducted into his professional role as practitioner.²

It is commonly accepted that occupational groups differ from each other on various personality dimensions, and that, within each group, members tend to be quite homogeneous on these variables. Whether the occupational milieu shapes the attitudes of novices and so contributes to this homogeneity is often a matter of conjecture. Arguments supporting or disputing such attitude changes are probably similar to those voiced respecting the effect of environment on the mental ability of an

¹Examples of works examining the process of occupational adjustment are those of Caplow (2), Roe (19), Darley and Hagenah (4), Whyte (26) and Nosow and Form (18).

²A number of these studies are reviewed in the related literature chapter of this thesis (Chapter III).

individual. The resolution of this controversy may be similar.

There are two polar orientations commonly adopted in this regard. One camp supports attitude change; the other suggests that selection and attrition are the main factors contributing to homogeneity among incumbents of similar occupational roles. Research evidence is often cited by each camp to support its respective stand.

Darley and Hagenah are typical of writers who question the part that attitude change plays in decreasing variability among holders of similar occupational roles. From an analysis of existing research they conclude that individuals of certain personality, perceptual habits, and values characteristically seek out occupations that permit the free play of these behaviors, rather than personality, perceptual habits, and values being shaped by participation in an occupation. That is, Darley and Hagenah believe that even in occupational selection the old adage, "birds of a feather flock together," applies (4, pp. 18-19). Or, as Holland more recently states, "In one sense, choosing a vocation means finding people who are like one's self. . .with similar attitudes, values, abilities, etc." (10, p. 2).

While recognizing that selection and attrition are important factors in producing an occupational group more homogeneous than the general population, it is probably unrealistic to take a stand as extreme as that taken by Darley and Hagenah and Holland. Probably the explanation proffered by Rosenberg, Suchman, and Goldsen more closely approximates reality, that is, both selection and personality change contribute to the similarity among occupants of like occupational roles.

On the basis of their findings in an extensive study of occupational selection among Cornell University students ($N = 4,585$), Rosenberg, Suchman, and Goldsen conclude that there is, among students whose occupational choices and values are in conflict, ". . . a tendency either to switch to an occupation in which they feel they can satisfy their values, or to select occupational values which they feel their chosen fields can satisfy" (22, pp. 124-125). In either case, it appears that the end result is to make them more homogeneous with their occupational group, and as the researchers report, to make them ". . . more contented, more satisfied, more willing to enter their fields" (22, p. 125).

Some attitudes appropriate to an occupational role are brought to the role by the novice; other attitudes appropriate to the role are, in all likelihood, acquired later. Undoubtedly there are great variations among individuals in this respect; some are more changeable; others hold more enduring attitudes.

As Newcomb has stated, although attitudes are relatively enduring, this does not mean that once acquired they become unchanging (17, p. 220).

An equation expressing the relationship could be formulated thus:

$$A_i = A_o + A_n$$

where,

A_i represents the attitude syndrome or habitual frame of reference used by an incumbent of an occupational role,

A_o represents the old enduring attitudes brought to the occupational role, and those attitudes that were fortified by membership in it,

A_n represents the newly created attitudes and the less enduring ones that were modified to conform with the norms of the new occupational role (or the anticipated role).

It is recognized then that A_o would be more significant for some individuals who are predisposed to organize and work out their lives in long-range terms swerving little from their established paths. These people are less likely to modify existing attitudes or to adopt new ones. On the other hand, A_n would be more significant for the individuals who are predisposed to change in personality orientation. In even these extreme cases, it is recognized that a contribution is made by each term on the right hand side of the equation. Of pertinence to the present study is the contribution made by A_n , that is, the present study is concerned largely with the attitudes newly acquired as a result of membership in an occupational preparation program, in this case a teacher education program.

The process of "professionalization" involves more than what is ordinarily described as education and training. Although the process of teacher preparation embodies the acquisition of a considerable store of knowledge and pedagogical skills through didactic forms of instruction, it also involves an indirect learning through personal interaction with instructors, peers, practicing teachers, experienced teachers who have returned to university to improve their qualifications, and, to some extent, elementary and secondary pupils with whom teaching candidates come in contact. It is by these latter means especially that attitudes and behavior patterns are acquired.

Although subject-matter knowledge and pedagogical skills (the

cognitive component) are central to the teaching process, these are not the main concern of the present study. Instead the focus, as stated in Chapter I is upon selected attitudes of teachers and especially of prospective teachers. A theoretical analysis of the process of attitude formation and change follows.

I. REFERENCE GROUP THEORY AND ATTITUDE FORMATION

Definition and Significance of the Concept

Theorists in the field of psychology, notably Lewin (13, p. 239), have long recognized the importance of the environmental as well as personality variables in the explanation of behavior. This dual focus is succinctly illustrated in Lewin's equation $B = f(P, E)$, where B represents behavior; P stands for person; and E stands for environment. Getzels (6, p. 56), and Guba (7, p. 124), in their social systems model also recognize the influence of both the personality dimension (idio-graphic) and the role dimension (nomothetic). They state that the behavior of an individual within a system can be attributed to the expectations which are held for him by others and also to his own need-dispositions. This thesis accepts the above behavioristic equation as axiomatic, and attempts to demonstrate the empirical articulation between a psychological variable, selected attitudes, and a social psychological concept, reference group theory.

In the words of Rogers and Havens,

Behavior takes place in situations. Individuals do not exist as a mass of disconnected units. They are members of social systems, and these memberships in social systems have important effects upon their behavior. The situational fields [those parts of the environment perceived by the individual as significant for him] in which

behavior occurs do not necessarily follow community or organizational boundaries. One may be psychologically identified with a group and take the group's perspective as his own without being on the membership list. Of course, physical proximity, along with social status and other psychological identifications, are factors influencing frequency of interaction (20, p. 302).

Reference group theory attempts to explain the effects that one's membership groups, and the non-membership groups to which he aspires to belong, have on his behavior. As Merton has stated,

. . .Reference group theory aims to systematize the determinants, and consequences of those processes of evaluation and self-appraisal in which the individual takes the values or standards of other individuals and groups as a comparative frame of reference (15, p. 234).

This theory recognizes that it is man's membership in certain--not always voluntarily selected groups--which to a great extent moulds his attitudes and values, and influences his ways of seeing and doing things. An individual adopts motives in common with other group members and interacts with them to form a group structure of which he becomes an integral part. Sherif and Sherif claim that the groups of which an individual is a member are his reference groups, and that ordinarily one's attitudes and loyalties are derived from the values, norms, and status regulations of his membership groups (23, p. 175). However, the term reference group, coined by Roper (21), and first used extensively by Hyman (11), encompasses as well those other groups from which an individual derives the anchorages or frames of reference regulating his behavior, groups to which he pledges a psychological relatedness. The norms of the group become the individual's norms.

Consequently, an example of a possible reference group for prospective teachers is the whole body of Education students in their teacher

training program because they are members of this group. This would be a membership reference group for them. Another reference group might be the teaching profession at large because this presumably is the group of which all Education students are aspiring to become members. The latter is a non-membership reference group.

It is evident that individuals may have more than one reference group. As Sherif and Sherif state (23, p. 176), groups are not closed systems. Many people necessarily move in multiple groups. Most of us have many reference groups, and the Education student likewise has many reference groups. He is simultaneously a member of his family group, his church group, his peer group, his community group, and his subject matter field group. Although membership in these various groups may be overlapping, it is seldom identical.

Formation and Significance of Group Norms

Rogers and Havens state that, "Behavior is normatively regulated" (20, p. 302). Sherif and Sherif explain how group norms influence the behavior of individual members. They assert that group structure which evolves over a period of time gives rise as well to by-products of the interaction process of the group. These by-products become stabilized in the form of catchwords, slogans, jargon, nicknames, customs, values, traditions, and the like. The most significant by-product is a set of criteria which regulate the behavior of individual group members. These criteria, called social norms, are standardized generalizations concerning expected or ideal modes of behavior in relevant stimulus situations. Although group norms cannot be standardized for every possible item of behavior or every task or situation, they are standardized in relation to

all matters of consequence to the group. Norms, for the various statuses and roles are stabilized in the form of reciprocal expectations. Norms or social values seldom specify just a single way of behaving in a given situation; instead, they usually define a range of tolerable behavior. This range of tolerable behavior is greater for matters of minor consequence to the group, allowing extensive variation in behavior. However, "in vital matters concerning the identity, major goals, continued existence of the group, the range of tolerable behavior is proportionally narrow" (23, p. 171).

There are pressures within the individual and pressures from the membership group that influence an individual to uphold group norms. In the terminology of Getzels and Guba, his behavior is a function of both the role and personality dimensions. Sherif and Sherif agree. Linking reference group theory with the social psychological concept of ego-involvement, they state that an individual's belongingness in groups, and his upholding group values and norms are not due exclusively to external pressures. "Becoming a member of a group, or aspiring to become one, generates a sense of inner urgency to cherish and uphold his group values" (23, p. 619). The individual experiences the group values or norms as his; that is, he becomes ego-involved in the group.

Sherif and Sherif point up the significance that group norms have to attitude formation and change. In their words:

Social norms. . .are an important source of the individual's attitudes, hence of his motives. Attitudes, psychological relatedness in various respects, aspirations, and strivings can be understood as parts of larger processes when they are related to the groups and group products from which they are derived (23, p. 175).

With sufficient interaction among members, an individual's perception of others' evaluations of him becomes quite accurate due to the continuous feed-back he receives, feed-back which, Jackson states, distributes information "about expectations and symbolic rewards or punishments in terms of the quality of members' compliance or contribution" (12, p. 137).

Merton, on the other hand, reports the consequences of limited interaction. He writes that deviant attitudes tend to persist because those holding them are insulated from intimate association with persons holding the more prevalent attitudes (15, p. 49).

Applying these generalizations to teaching candidates, we might hypothesize that those who have frequent associations with other Education students would adopt attitudes in common with this group. They perceive the group norms and tend to accept them. If, in addition, some of their peer associations are with persons who have teaching experience, and if they hold these persons in high esteem, they tend to develop attitudes similar to theirs. Persons of the latter type--with whom they are likely to "rub elbows" on campus--are the teachers who have returned to university to improve their academic qualifications.

Multiple Group Affiliation

It has been stated earlier in this thesis (supra, pp. 17-18) that it is possible for an individual to have more than one reference group. In our highly differentiated modern society, not only is it possible but probable that one moves in multiple groups rather than in a single group. That is, we are said to have multiple group affiliations. If one accepts

the definition given by Merton, that a reference group is not only a group, but may be an individual or social category as well (15, p. 284), it is evident that a person may have a multitude of reference groups. If alternately, Shibutani's definition that an individual has as many reference groups as there are communications channels in which he participates (24, p. 258), is accepted, then one's possible reference groups are legion. Each time a man joins a new circle of friends, subscribes to a new periodical, begins to listen to a radio or television program, he enters a new communication channel, and consequently, by Shibutani's definition enters a new social world and a new reference group. Such multiple group affiliations can be a source of conflict for the individual. Sherif and Sherif state that often these groups place different and conflicting demands on him, tending to pull him in different directions, arousing different and often contradictory values, loyalties, conformities, and aspirations (23, p. 176). Since these groups are so numerous, it is impossible to study the effects of each. Fortunately, it is not necessary to do so.

Among the interesting findings in Hyman's early research was his observation that the total population rarely served as a reference group for individual behavior. Hyman further states that in accounting for the social influences on the individual, terms like "culture," "society," or even "subculture," are also too general. He adds that there is for each individual a great number of more intimate reference groups made up of one's friends and people he works with (11, p. 24).

Hyman's findings are of major consequence. Studying reference

group processes is possible because the values, norms, and status regulations of groups with which one is in intimate association are the major influences determining his attitudes and loyalties. Jackson agrees with Hyman's assertion but adds that, "with sufficient interaction. . . similar processes occur throughout the larger system" (12, pp. 138-139).

Applying this generalization to the prospective teacher, we would predict that a selected few Education students with whom he is in intimate contact (say, in his vocational major) serve as his reference group to a greater degree than does the whole body of Education students. The prospective teacher will emulate the former group, especially if he considers them part of the "prestigious strata" of his chosen profession.

To summarize, although the reference groups an individual has are almost innumerable, the number which are actually influential is relatively small. Furthermore, particular reference groups are relevant to particular situations. Affiliation with one group may have an effect on the persistence or change of one set of attitudes; affiliation with another may have an effect on a totally different set. Thus, the subject matter field membership group may have an effect on an Education student's attitudes respecting the scientific method of problem solving. His elementary or secondary route membership group affiliations may have little effect on this particular attitude but may, for example, affect his attitude toward increased specialization at the secondary school level.

Merton notes that some reference groups are mutually sustaining.

He gives as examples, age, marital status, and educational level. The three are mutually sustaining if they are consistently related. Merton also advises that, "the institutional norms evoke comparisons with others similar in particular aspects of status--'others in his shoes'--thus encouraging common reference groups. . ." for all individuals belonging to a given group (15, pp. 245-246).

In order to predict the behavior of a particular teacher in a particular situation, it is necessary to identify the perspective he is using, that is, his reference group for that situation. At times, when concerned with a family problem, the reference group may be his own family. He may view the situation as a father. At times, the audience, real or imagined, may be his elementary major colleagues. The issue may be viewed from an elementary teacher perspective. At other times he is acting as a Social Studies teacher and his line of action depends upon the real or anticipated reactions of his subject matter colleagues, as well as those of any other people for whom he is performing.

Education students may at times, especially early in their program, view teaching from the standpoint of student. At other times, especially later in the program, they will view matters pertaining to teachers and teaching from a teacher perspective. Most of the time, as outlined above, the number of their reference groups is small and consistent.

Anticipatory Socialization

The concept reference group, coined in 1940, soon gave birth to a whole new theory of social interaction, namely reference group theory.

One of the major contributions of this theory was an explanation for the behavior of an individual which was at variance with his membership group's norms, yet was too consistent to be termed random or idiosyncratic. Reference group theory states that there may be present the influence of a non-membership group to which he is relating himself psychologically, and which is therefore providing the anchorages or norms regulating his behavior.

Merton proposes that a key concept in explaining the behavior of individuals who have non-membership groups as reference groups is the concept anticipatory socialization. Anticipatory socialization refers to, ". . .the acquisition of values and orientations found in statuses and groups in which one is not yet engaged but which one is likely to enter" (15, p. 384).

In other words, anticipatory socialization serves the function of preparing the individual for status in a group in which he aspires to hold membership. The process of anticipatory socialization has two components. One, provided by the deliberate and explicit education and training programs, is the formal part. The informal (often unwitting and implicit) part of this process is the particular aspect that anticipatory socialization attempts to explain.

Unlike formal preparation for a role to be performed in connection with a future status, informal preparation tends to have a distinctive character. Merton lists three characteristics which make the informal preparation distinctive. These are: (1) no one is explicitly designated to train individuals for the informal part of these roles;

nevertheless, preparation is unwittingly and collaterally provided by the personnel providing the formal education and training. (2) Anticipatory socialization is not didactic. To become oriented toward a status he does not yet occupy, the individual more or less unwittingly draws implications from cues in behavioral situations for future role-behavior. (3) The values and role-requirements being learned by the individual typically are not codified (15, p. 385).

Rosenberg relates the process of anticipatory socialization to adjustment to one's future occupational role. He states that occupational adjustment is probably facilitated by the process of anticipatory socialization (22, p. 125), and adds that once a student has chosen his occupational field, ". . . he is likely to incorporate into his present self-image aspects of his future occupational status." The student becomes a "future engineer," a "future doctor," or a "future teacher" (22, p. 24). In the course of time the individual will develop a representation of the behavior, attitudes, and values appropriate for a member of his chosen occupation.

. . . This image of his future occupational status is likely to influence the student's present attitudes, values, and behavior; he may start to think and behave in a way which he believes will be appropriate when he actually enters occupational practice (22, p. 24).

Thus, his future occupational status influences current attitudes and behavior.

Merton suggests that anticipatory socialization assists one in acquiring the values of a group that he has a good chance of entering by: (1) helping in one's rise into a group, and (2) easing his adjustment

after he has become part of it. Anticipatory socialization is the first step in a three stage process consisting of: (1) anticipatory socialization, (2) transitory stage, (3) group membership (15, p. 265).

As stated earlier (supra, p. 18), the teaching profession is probably a non-membership reference group for teaching candidates. All teaching candidates are presumably aspiring to membership in this group. The process of anticipatory socialization is at work preparing these students for membership in the profession. Consequently, attitudes pertinent to their future role as teachers will be influenced by means of anticipatory socialization. This process is probably facilitated, especially in the senior years of the teacher preparation program, by the presence of a number of experienced teachers in their midst. Since the degree of commitment to the profession varies with different individuals it is plausible to speculate that not all individuals or groups will be influenced in the same way, or to the same degree.

Influence of Reference Groups on Attitudes

Motivation, provided by desiring to belong to a group, is a very influential power supporting the sharing of frames of reference and consequently the sharing of similar attitudes. Such shared frames of reference are the social norms treated earlier in the present chapter (supra, pp. 18-20). The two concepts are related in the following manner. When one is willingly complying with the norms of a group, it is likely that one does so because he shares frames of reference with group members. This implies that he has attitudes in common with them. One's reference groups, at least occasionally, influence one's attitudes and

behavior.

Accordingly, a membership group such as one's family will likely influence his attitude regarding religion or politics. One's church may serve to shape his attitude toward evolution or birth control, and his school may influence (not necessarily positively) his attitude toward higher education. Likewise, the groups to which a person aspires to belong influence his attitudes. The teaching profession at large may in this way influence the Education student's attitude toward working conditions, provincial salary schedules, merit pay, accreditation, or the number of students a teacher can effectively teach. It may thereby help to shape the frame of reference he uses when evaluating professional policy. On the other hand, it may have little or no influence in shaping his attitudes respecting politics or religion. His subject field major group may similarly influence his attitude toward science and the use of the scientific method of problem solving. It may have little effect on his interest in people and desire for being with them or on his attitude toward the professional organization.

Newcomb believes that the degree to which an individual is satisfied or dissatisfied with membership in his group will be the degree to which his group will constitute a reference group for him. If an individual is an enthusiastic group member, this group constitutes a very powerful reference group. The enthusiastic member will be more likely than the indifferent one to change his attitudes so that they conform with the group norms.

It is also highly probable that individuals who have spent more

time interacting with others in their membership group will tend to perceive objects, groups, persons, customs, and ideas in much the same way. Prospective teachers whose period of anticipatory socialization has been longer (that is, who remain at university longer) are more likely to acquire attitudes perceived relevant to their particular role as teachers.

Reference Group Theory and Occupational Status

Division of functions and coordination of functions within a group make a hierarchy of statuses necessary. In time, the reciprocal expectations pertaining to function and behavior in the group become stabilized for each position in the group structure. The behavior of other members toward the person occupying a particular role and status position and one's own behavior toward others are regulated by these stabilized expectations. An individual's aspirations are similarly influenced by his status and role.

As an individual comes to participate in a group or to belong psychologically to it, he learns the scale of status positions within it. He begins to recognize the need to exhibit the necessary qualities, skills, and accomplishments in order to be admitted to the group, or remain in it. The existing hierarchy of status positions in the group thus tends to shape one's attitudes and evaluations. To cite Sherif and Sherif,

A central portion of the individual's sense of personal identity, his ego-attitudes defining his status and role relations with others, his prestige concerns, the level of his future goals is derived from groups of which he is part or aspires to be a part (23, p. 630).

Although there are many bases for ascribing status to a person--such as wealth, education, occupation, appearance, race, religion, and talent--occupational status is possibly the most important of these. People tend to conceive of themselves primarily in occupational terms. It is a common belief in our society that individual talent and character determine occupation, and that to move to a higher occupational status group is in itself a sign of success or upward mobility. The status of an occupation has a profound effect on those who practice that occupation. In this connection Lieberman states,

The influence of occupational status on the practitioners is both pervasive and fundamental. It affects who will enter the occupation and what specializations within it they will seek. It affects the quantity and quality of the work that is done, the job satisfactions of the practitioners, and the dress, manners, outlook and moral ideas of the practitioners (14, p. 455).

The status of one's occupation (and one's status within the occupation) is assumed to be a fair index of one's ability and intelligence, his character and personal acceptability. It is at once both a source of material and psychological satisfactions, and a determinant of his behavior.

The status of Education in comparison with other occupations is of minor concern to the theory being developed in this thesis. Of major importance, however, is the status of the various specialties within the Education profession in relation to each other.

As was stated elsewhere, repeated interaction of individuals in a group gives rise to group structure consisting of roles and hierarchical statuses (supra, p. 6). Benoit-Smullyan explains what is meant by a status hierarchy.

By a hierarchy we mean a number of individuals ordered on an inferiority-superiority scale with respect to the comparative degree to which they possess or embody some socially approved or generally desired attribute or characteristic. A hierarchical position is thus always a position in which one individual is identified with others with regard to the possession or embodiment of some common characteristic, but differentiated from these others in the degree, or measure, to which the characteristic is possessed or embodied (1, p. 151).

There are three hierarchies that Benoit-Smullyan considers basic in our culture. These are: (1) the economic, (2) the political, and, (3) the prestige hierarchies. Relative position in each hierarchy is termed economic, political, or prestige status. A composite of the three is popularly termed "social status" (1, p. 152).

Sherif and Sherif assert that group organization everywhere is hierarchical. They report that individuals differ in personal, social, or material capacities and in resources and skills, some of which are more pertinent to group goals than others. As a result, some people achieve greater recognition and authority than others. Or, as Roe suggests, more prestige and status are accorded them (19, p. 6).

Although there are conceivably a multitude of ways in which individuals can be compared and adjudged superior or inferior, the Sherifs, in agreement with Benoit-Smullyan, recognize economic, political, and prestige status as primary or basic. High ranking in other respects, they state, unless it improves the status in one of the three basic types, has little objective importance. Furthermore, if a person possesses high status in these fundamental respects--the level may not be the same in all three--he is accorded high social position even though weak in other regards (23, pp. 162, 163).

Roe asserts that in our society one's social and economic status depend more upon one's occupation than upon anything else. However, she claims that the attempt to explain why men work the way they do in terms of economic rewards which the job offers has proved totally inadequate (19, pp. 23,33). Warner agrees with Roe's assertion. In his field investigations Warner found that the hypothesis of the dominance of the economic system in America did not explain many of man's actions, and some of the determining evaluations of him by others in his community. "The wealthiest man. . .was often outranked by others of much less wealth," he states, and, "some of the people who were consistently placed at the top of the social heap had less money than those at the bottom" (25, p. 788). This lack of correlation in Warner's research between economic and prestige status supplemented by Roe's assertion that certain groups of people derive the greatest source of satisfaction from the status and prestige conferred by the occupation (19, p. 33), appears to give prestige as a status determinant more significance than money. If this is so, then persons aspiring to membership in groups, or to higher status within a group, are influenced more by the prestige of the non-membership group--or the aspired for position--than by the economic rewards anticipated from such membership. In accordance with this thesis, Heist states, "There is ample reason to suppose that young people, involved with a vocational decision, are cognizant of the prestige factor" (9, pp. 213-214).

Prestige rankings of various occupations in relation to each other have been constructed as early as 1924. In that year Counts studied the social standing of forty-five general occupations including

five Education positions (3, pp. 16-27). More recently, scales based upon such rankings have been constructed in order to determine the level of occupational aspiration of individuals. Probably the most comprehensive research done in developing an instrument designed to assess the level of occupational aspiration was undertaken by Haller and Miller (8). Based on the findings of a 1947 National Opinion Research Center survey of the general standing of ninety occupations (16, pp. 411-426), Haller and Miller used seventy-two rankings to construct their Occupational Aspiration Scale.

Haller and Miller state that level of occupational aspiration (LOA) is a personal orientation to a social object (the object in this case being the occupational structure, with particular occupations ranked from highest to lowest in terms of prestige), and is therefore an attitude. "A person's LOA thus stands for his orientation to action with respect to a point or a limited range of points on the occupational prestige hierarchy." LOA is a "sociogenic" attitude because one's level of occupational aspiration is learned in interaction with other persons. Most people know very little detail about the role behaviors associated with the majority of present-day occupations. Nevertheless, people believe they are knowledgeable with respect to one important aspect of role behavior, the styles of life characteristic of each occupational prestige level. Having this knowledge, "the person must view some levels as more appropriate for himself than others" (8, pp. 11,13,15).

One's level of occupational aspiration is evidently related to his self-concept. To use Heist's wording,

Fundamental in the personal development that leads to an occupational decision is the self-perception of self-concept of the individual. The image of the expected occupational role must be coordinate to that of a person's self-concept.

Heist also claims that,

. . . Though students generally have similar images of the various occupations, their self-concept (a synthesis at the moment of their past experiences and learning) is a major determinant of their decision to enter an occupation of high status or one of lower status. Presumably, the profession to which one is finally assigned, is to a large degree a reflection of both the image of a profession and that of one's self (9, p. 215).

The higher his level of aspiration, the more motivated is he to exhibit those attitudes and attributes common to the group whose membership he desires.

In summary, one's level of occupational aspiration is an attitude one has which involves his conception of the self in relation to a particular level of the occupational prestige hierarchy. Haller and Miller surmise that it is a type of anticipatory socialization because a process of learning and identification with the desired future role takes place long before the person formally begins to perform the role (8, p. 15). It is therefore closely related to reference group theory.

The factors that would be expected to influence one's self-concept and thereby his level of occupational aspiration are enumerated by Davis and Olesen. They state that structural and cultural attributes such as maleness, middle class achievement orientation, and professional status serve to motivate people to make high degrees of vocational commitment (5, p. 90). Presumably, these attributes also function to motivate individuals to aspire to differing levels of vocational status. Rosenberg concurs with this point of view, stating that sex roles are an

important factor in determining occupational values; consequently, unless a woman adopts "male" attitudes toward occupations, she will tend to select the values which women choose in occupations rather than those which men choose. He adds that, "Women are more likely to choose a humanitarian, education, non profit," occupation than are men (22, p. 50). Presumably, they aspire to positions of lower prestige status, positions whose political and economic status is also lower, than do men. "Almost all of them will be subject to some sort of occupational supervision or domination" (22, p. 50).

In recognition of the above, it is likely that one's occupational aspiration level is to a great extent affected by status characteristics such as: (1) his sex, (2) his age, (3) his socio-economic background, (4) his past achievements, and other background factors. It is just as probable that one's reference groups play a significant role in shaping his self-perception and thereby influencing his level of vocational aspiration.

To illustrate, a teaching candidate's self-concepts will be influenced by the comparisons he makes between his achievement and the achievement levels of his classmates. In all likelihood, the more often the result of these comparisons is in his favor, the higher will be his level of occupational aspiration in relation to those of his colleagues. On the other hand, the more often is his achievement level low in relation to his classmates, the more probable it is that his aspiration level will be correspondingly low.

II. SUMMARY AND IMPLICATIONS FOR PRESENT STUDY

To recapitulate, reference group theory was used to explain the effects that Education students' membership groups (their undergraduate or graduate group) and non-membership group (the teaching profession to which they are presumably aspiring to belong) may have on their attitudes and behavior.

Some attitudes appropriate to an occupational role are brought to the occupational preparation program by the novice; other attitudes appropriate to the role are acquired as a result of participation in the preparation program. Attitude differences between groups of future practitioners beginning a professional education program and those completing their pre-service program may also be the result of selection and attrition among candidates with particular attitudes.

Reference group theory attempts to explain the effects that one's membership groups and the non-membership groups to which he aspires to belong have on his attitudes and behavior. One's behavior and attitudes are influenced by the norms of one's membership group and the norms of the aspired to non-membership group. These group norms specify standards of acceptable behavior and are concerned largely with matters vital to the survival of the group and to the achievement of its goals. Pressures from other group members and pressures from within the individual influence him to uphold group norms.

Although an individual's reference groups are numerous, the ones with which he is in intimate association (which he habitually uses) are the major influences determining his attitudes and loyalties. Particular

reference groups are relevant to particular situations. Affiliation with one group may have an effect on the persistence or change of one set of attitudes; affiliation with another group may have an effect on a totally different set.

Reference group theory states that individuals, in this case Education students, will be more likely to change in the attitudes they perceive important to maintaining membership in their present membership groups. The change will be in the direction of conformity with predominant attitudes.

By means of anticipatory socialization they will also change in attitudes and behavior patterns perceived appropriate to their future status as practicing teachers and incorporate these into their present self-image prior to incumbency. Reference group theory predicts that they are less likely to be changeable in other attitudes and behavior patterns. Groups with which teaching candidates are in intimate contact will influence their attitudes to a greater degree than will more inclusive groups. A number of the "groups" that may be reference groups for them are merely social categories, that is, age groups, sex, marital status, and social class. Some of these groups may function independently to influence attitudes. Others may hold mutually sustaining or even conflicting expectations.

Positions in any group differ in status, that is, in the amount of recognition or authority accorded them. Although positions may be ranked in a multitude of ways--for example, according to income, political power or prestige--prestige ranking appears to be the most significant. The Education positions used in constructing one of the scales in

the present study will therefore be ranked on the prestige dimension.

One's level of occupational aspiration, based on such a ranking of positions, also acts as a kind of anticipatory socialization preparing one for the position sought. An Education student feels the need to exhibit the necessary qualities, skills, and accomplishments in order to be admitted to the aspired-for position. He, in effect, becomes the future primary teacher, guidance counselor, or high school principal. However, he will probably feel a greater need to belong psychologically to the groups representing his more immediate goals than to those representing his more distant ones.

Statement of Hypotheses

In the light of the theoretical analysis of the problem, the sub-problems (supra, p. 7), were stated in the form of research hypotheses. Hypotheses 1, 2, 3, and 4 were concerned principally with the study's effort to identify attitude differences between sub-groups of Education students, groups that were thought actual or possible reference groups for them. These hypotheses were as follows:

- Hypothesis 1: Education students classified by social category differ in attitudes.
- 1.1: Education students classified on the basis of sex differ significantly in attitudes.
 - 1.2: Education students classified on the basis of marital status differ significantly in attitudes.
 - 1.3: Education students classified on the basis of age differ significantly in attitudes.
 - 1.4: Education students classified on the basis of subjective socio-economic status differ significantly in attitudes.

Hypothesis 2: Membership groups of Education students differ in attitudes.

2.1: Education students classified by curriculum major differ significantly in attitudes.

2.2: Education students classified by subject matter field of concentration differ significantly in attitudes.

2.3: Education students with teaching experience differ significantly in attitudes from Education students with no teaching experience.

Hypothesis 3: Education students classified by academic proficiency differ significantly in attitudes.

Hypothesis 4: Education students classified by category of Education positions aspired to differ significantly in attitudes.

Hypothesis 5 was concerned primarily with discovering what attitude changes resulted from exposure to the influences surrounding a teacher preparation program. The hypothesis was stated as follows:

Hypothesis 5: Education freshmen, juniors, sophomores and seniors differ in attitudes.

5.1: Prospective teachers classified by anticipated length of preparation program differ significantly in attitudes.

5.2: Prospective teachers classified by number of years spent in preparation program differ significantly in attitudes.

5.3: Variability from mean attitude scale scores decreases with increased length of preparation.

The purpose in Hypothesis 6 was to investigate attitude differences between prospective teachers in two alternate programs of teacher preparation. This hypothesis was stated as follows:

Hypothesis 6: Prospective teachers completing a four-year program of teacher preparation in the Faculty of Education differ significantly in attitudes from prospective teachers who choose first to earn a degree in another faculty.

REFERENCES FOR CHAPTER II

1. Benoit-Smullyan, Emile. "Status, Status Types and Status Interrelations," American Sociological Review, IX (April, 1944), 151-161.
2. Caplow, Theodore. The Sociology of Work. Minneapolis: University of Minnesota Press, 1954.
3. Counts, George C. "The Social Status of Occupations: A Problem in Vocational Guidance," School Review, XXXIII (January, 1925), 16-27.
4. Darley, John G., and Theda Haganah. Vocational Interest Measurement: Theory and Practice. Minneapolis: University of Minnesota Press, 1955.
5. Davis, Fred, and Virginia Olesen. "Initiation into a Woman's Profession: Identity Problems in the Status Transition of Coed to Student Nurse," Sociometry, XXVI (March, 1963), 89-101.
6. Getzels, Jacob W. "Theory and Practice in Educational Administration: An Old Question Revisited," Administrative Theory as a Guide to Action, Roald F. Campbell, and James M. Lipham, editors. Chicago: University of Chicago Press, 1960, pp. 37-58.
7. Guba, Egon G. "Research in Internal Administration--What Do We Know?" Administrative Theory as a Guide to Action, Roald F. Campbell, and James M. Lipham, editors. Chicago: University of Chicago Press, 1960, pp. 113-130.
8. Haller, Archibald O., and Irwin W. Miller. The Occupational Aspiration Scale: Theory, Structure and Correlates. Technical Bulletin Number 288. East Lansing, Mich.: State University Press, 1963.
9. Heist, Paul. "The Student," Education for the Professions: The Sixty-First Yearbook of the National Society for the Study of Education, Nelson B. Henry, editor. Chicago: The University of Chicago Press, 1962, pp. 211-234.
10. Holland, John J. "Some Explorations of a Theory of Vocational Choice," Psychological Monographs: General and Applied, Whole No. 545, LXXVI (No. 26, 1962), 49 pp.
11. Hyman, Herbert Hiram. "The Psychology of Status," Archives of Psychology, No. 269 (June, 1942), 94 pp.

12. Jackson, Jay M. "Reference Group Processes in a Formal Organization," Group Dynamics Research and Theory, Dorwin Cartwright and Alvin Zander, editors. Evanston, Ill.: Row, Peterson and Company, 1960, pp. 120-140.
13. Lewin, K. "Behavior and Development as a Function of the Total Situation," Field Theory in Social Science, Dorwin Cartwright, editor. New York: Harper, 1951, pp. 238-303.
14. Lieberman, Myron. Education as a Profession. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1958.
15. Merton, Robert K. Social Theory and Social Structure. Glencoe, Ill.: The Free Press, 1957.
16. National Opinion Research Center. "Jobs and Occupations: A Popular Evaluation," Class, Status, and Power, Rienhard Bendix and Seymour Martin Lipset, editors. Glencoe, Ill.: The Free Press, 1953, pp. 411-426.
17. Newcomb, Theodore M. Social Psychology. New York: The Dryden Press, 1956.
18. Nosow, Sigmud and William H. Form. Man, Work, and Society. New York: Basic Books, 1962.
19. Roe, Anne. The Psychology of Occupations. New York: Wiley Press, 1956.
20. Rogers, Everett M., and A. Eugene Havens. "Toward a Theory of the Diffusion and Adoption of Innovations," Diffusion of Innovations, E. M. Rogers, editor. New York: The Free Press of Glencoe, 1962, pp. 300-316.
21. Roper, E. "Classifying Respondents by Economic Status," Public Opinion Quarterly, IV (Winter, 1940), 270-272.
22. Rosenberg, Morris, Edward A. Suchman, and Rose K. Goldsen. Occupations and Values. Glencoe, Ill.: The Free Press, 1957.
23. Sherif, Muzafer and Carolyn W. Sherif. An Outline of Social Psychology, Revised edition. New York: Harper and Row, 1956.
24. Shibutani, Tamotsu. Society and Personality. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961.
25. Warner, W. Lloyd. "Social Anthropology and the Modern Community," The American Journal of Sociology, XLVI (May, 1941), 785-796.
26. Whyte, William Foote. Men at Work. Homewood, Ill.: Dorsey Press, 1961.

CHAPTER III

REVIEW OF THE LITERATURE

In Chapter I the problem was stated and the terms defined. The problem, briefly stated, was to determine differences and changes in selected attitudes of students pursuing a four-year program of teacher preparation and to identify a number of sources of influence on these attitudes. Secondly, the problem was to compare seniors in two alternate programs of teacher preparation on these same attitudes and to account for the differences. In Chapter II the rationale underlying the hypotheses was developed and the research hypotheses stated.

In this chapter the hypotheses are examined in the light of related literature. Research evidence from studies conducted outside Education is cited where related literature in the field of teacher education was lacking, and where findings in these other studies seemed pertinent. Some examples of research related to the development of the Education Profession Aspiration Scale are also reviewed.

I. PERSONALITY VARIABLES AND MEMBERSHIP GROUP CLASSIFICATIONS

Differences Among Curricular Groupings and Subject Matter Fields of Practicing Teachers

That there are differences among occupational groups on various personality factors is commonly accepted. The recognition and measurement of some of these differences has, for example, made possible the construction of attitude inventories extensively used in occupational counselling.

Both the Strong Vocational Interest Blank and Kuder Preference Record¹ are popular examples of such inventories based on different interests of various occupational groups.

More recently, differences in personality variables have been found among sub-groups within occupational groups. Strong has demonstrated that it is meaningless to treat teachers as a unitary occupational group. The Strong Vocational Interest Blank provides different keys for different curricular groupings and different subject matter fields of teachers. Elementary and high school teachers have separate keys. High school English and high school science teachers also have different keys. In Strong's words,

. . .Evidently teaching per se, like managing per se, is less significant than the specific kind of teaching or managing. Whatever one may wish to believe regarding the proper function of teaching, he must recognize that today teachers of mathematics and science have interests that are quite distinct from those of teachers of the social sciences (33, pp. 161-162).

The findings of Getzels and Jackson support Strong's contention. On the strength of evidence cited in their review of teacher personality studies, Getzels and Jackson state that the Strong Vocational Interest Blank discriminates between the interests of elementary and secondary teachers and add that ". . .within the secondary school teacher group, the subject taught is a more significant differentiating factor than teaching itself" (11, p. 529).

¹Research manuals accompanying these inventories list numerous studies that reveal differences among occupational groups on the various dimensions that are measured by these inventories. No attempt will be made in the present study to review any of these.

Studies using the Kuder Preference Record have demonstrated similar differences. Getzels and Jackson report that Kuder vocational preference categories do not discriminate for undifferentiated groups of either male or female teachers. However, as with the Strong Vocational Interest Blank notable differences have been found when teachers are divided into subject-matter sub-groups. There are evidently significant differences among sub-groups of teachers on the variables measured by Kuder. Getzels and Jackson conclude, "In effect, it seems that Kuder vocational preference categories are not so much distinctive of teachers qua teachers as of teachers in specific subject areas" (11, p. 527).

In a like manner a study using the Minnesota Teacher Attitude Inventory (MTAI) demonstrates differences among early childhood education majors, academic field majors, and special field majors (11, p. 510).

The MTAI has also successfully distinguished between curricular groupings of teachers. Elementary teachers obtain scores significantly different from secondary teachers on this instrument (11, p. 512). Similarly, an instrument developed as part of the Teacher Characteristics Study measuring (1) attitudes toward administrators, (2) attitude toward adult nonadministrative groups, and (3) attitude toward pupils, demonstrated significant differences between elementary and secondary school teachers; the elementary teachers having the "more favourable attitudes" (11, p. 425).

The monumental six-year study of teacher characteristics by Ryans and associates has additional relevance to this section on differences

based on curricular groupings and subject matter field groupings in that the Teacher Characteristics Schedule developed in the study (for facilitating indirect estimates of classroom behavior) had multiple scoring keys. Ryans' study involved some 6,000 teachers in 1,700 schools and 450 school systems in the United States. Ryans states that very early in the study it seemed probable that certain characteristics might distinguish teachers generally from other occupational groups but that it was also likely that ". . . certain other characteristics might apply to one kind of teacher and yet be atypical for another teacher group" (31, p. 196). Subsequently, the researchers developed some thirty keys based on the characteristic preferences and activities of various teacher sub-groups. Of the thirty, they found three most useful for their research. These were an all elementary teacher key based on grade one to six teacher responses; an all secondary key based on responses of mathematics, science, English, and social studies secondary teachers; and an all teacher scoring key derived from responses of the combined elementary and secondary teacher groups (31, pp. 161-284).

Ryans' findings are consistent with reference group theory, as are those of Strong, and Getzels and Jackson. One set of behavior patterns and attitudes may be characteristic of a particular sub-group of teachers but, not of another, and not of the group as a whole. On the other hand, still another set of attitudes and behavior patterns may be typical of the teaching profession serving to distinguish it from other occupations.

Similarly, certain attitudes and behavior patterns may serve to distinguish between sub-groups of practicing teachers because these

teachers have as their frame of reference their particular sub-group. They may be unsuccessful in distinguishing among similar sub-groups of teaching candidates, however, if the latter have as a reference group other students and not practicing teachers.

In a doctoral study, completed in 1957, Andrews (1) set out to find differences among subject matter field groups (SMF) of practicing secondary teachers on personality needs (as measured by the Edwards Personal Preference Schedule), on dominant values (as measured by the Allport-Vernon-Lindzey Study of Values), and on Educational attitudes (as measured by the Kerlinger Progressivism-Traditionalism scale and the Minnesota Teacher Attitude Inventory). Andrews used as his sample 564 secondary teachers in the American Midwest. Using an analysis of variance technique he found significant differences among SMF groups of male secondary teachers on three of the fifteen needs; on four of the six dominant values, and on the Kerlinger attitude scale. The female sample showed differences on but two personality needs, and four dominant values.

The studies reviewed to this point support the assertion that there are differences in personality variables among subject matter field groups and curricular groupings of practicing teachers. Andrews' study demonstrates male-female differences within subject matter field groups of secondary teachers. The studies reviewed below investigated differences among subject matter field groups and curricular groupings of future teachers.

Differences Among Curricular Groupings and Subject Matter Field Groups
Of Teaching Candidates

The Allport-Vernon-Lindzey Study of Values has been successfully used to distinguish between subject matter field groups and curricular groupings of practicing teachers. Another study applied this instrument to subject matter field groups of teaching candidates at the University of California, Los Angeles. The researchers, MacLean, Gowan, and Gowan, found differences between subject matter fields of prospective teachers (N = 1,700) on the six AVL value dimensions (22, pp. 669-677).

Differences among subject matter groups appear long before candidates become fully certificated teachers. This is quite consistent with reference group theory--particularly with the process of anticipatory socialization. Noteworthy is the absence of significant differences in the MacLean, Gowan, and Gowan study between students specializing in different teaching areas when the Minnesota Multiphasic Inventory (MMPI) was applied (22, p. 672). This too is consistent with the theory. Differences exist only in areas deemed crucial to the accomplishment of the specific group's goals but not on those variables unrelated to the specific group's goals.

That certain non-cognitive measures may be unable to distinguish between sub-groups of Education students does not necessarily mean that these same instruments will not discriminate between teachers and other occupational groups. This conclusion is supported by a study of 125 male students enrolled in five professional training programs--education, law, journalism, medicine, and engineering. In the study, Blum applied

nine scales of MMPI and Drake's Social Introversion-Extraversion scale to his sample. Analysis of variance revealed differences significant at the .05 level of confidence on two MMPI scales, namely, Hysteria and Schizophrenia, and on the Social Introversion scale (2, pp. 31-65). It is evident that a given instrument may reveal differences between occupational groups but may be unable to discriminate between sub-groups within an occupation. To repeat, this is consistent with reference group theory. This is not to say that the latter differences are a result of change due to reference group processes; they may be due to selection by certain personality types of certain occupations.

Differences Among Teacher Groups Pursuing Different Preparation Programs

Andrews attributes the personality differences he found within his group of practicing teachers to individual teachers responding to different reference groups. He identified two major sub-groups among secondary teachers. These are a sub-group responsive to a subject matter reference group which he defines as ". . . the actual or idealized group consisting of former subject matter colleagues and college teachers. . .," and a sub-group responsive to the teacher reference group consisting of ". . . the authoritative and prestigious group in the school whose orientation is teaching and Education rather than a particular subject matter field" (1, p. 7).

By means of a statistical procedure, an index called the subject matter characteristic score was calculated for each teacher. On the basis of the score achieved, Andrews assigned individuals either to the teacher reference group, when their scores were more representative of the

mean of the total sample of teachers on the measures that discriminated between subject matter field groups, or to the subject matter reference group, when their scores were more representative of their subject matter field group's scores.

Andrews theorized that teachers with considerable preparation in their subject matter field as opposed to preparation in Education would become more responsive to the subject matter reference group than to the teacher reference group. This, he states, would be especially true for persons who received their preparation largely in subject matter departments in universities or liberal arts colleges as opposed to colleges or departments of Education in universities or teachers colleges (1, p. 8). Testing this hypothesis for men and women separately, he found a significant relationship in the direction hypothesized for males but not for females.

He explains this inconclusive result in the following manner:

. . .The context for female teachers is seen to differ from that for males in that for females teaching is a relatively high prestige occupation, females are not as vulnerable to the threat of promotional sanctions as are males, and for many females teaching is a secondary occupation to marriage (1, p. 158).

Andrews claims that as a consequence female teachers are not as responsive to the norms of either reference group; for them both reference groups are relatively impotent. On the other hand, the preparation program appeared to be an important factor in influencing the reference group chosen by men--and consequently in shaping their attitudes.

Applying the Minnesota Teachers Attitude Inventory, Kearney and Rocchio noted significant differences between practicing elementary

teachers when they used as criterion the type of teacher training institution attended. Highest scores were obtained by teachers who had earned a bachelor's degree from a university (mean = 56); next highest by those who had attended a teachers college (mean = 51), and lowest by those who had earned their degree in a liberal arts college (mean = 34) (18, pp. 703-708).

A similar study, using a sample of secondary teachers, indicated differences not as pronounced and not in the same relative order. Secondary teachers who trained at the university also scored highest (mean = 42), but the other two group means were reversed. Secondary teachers who trained at the teachers college scored lowest (mean = 26), and the liberal arts college group scored a mean of 27 (6, pp. 274-279). It is not clear in the report of the above two studies whether the university group pursued teacher education after earning a recognized degree or earned their degree in a teacher preparation department at the university. For this reason it is impossible to apply a generalization based on the two studies to the present study.

Using the Edwards Personal Preference Schedule, Guba, Jackson, and Bidwell, in a study of female students in a state university, a private teachers college, a Southern United States Negro university; and a private university; found that these differed significantly from the liberal arts norms provided in the Edwards Manual. They state that Education students in a teachers college display personality configurations resembling those of practicing teachers far more than do Education students in a multi-purpose institution. They claim that the former

group appear to be more "profession oriented" than do the latter, and add that, ". . .the resemblance between their personality structure and their perception of the teaching task may have been a major factor in their original decision to teach" (12, p. 5).

To summarize, the literature reviewed on personality differences among groups of teachers who had pursued differing preparation programs or different curricular routes to gain certification suggests that some practicing teachers are responsive to reference groups based upon their preparation program. One study demonstrates differences between students pursuing their teacher preparation in different teacher education institutions. Those educated in teachers colleges appear to display personality configurations more like practicing teachers. Relevant to this evidence is a comment by Getzels and Jackson. The two writers report:

. . .Researchers often. . .indiscriminantly lump students in education without regard to their teaching objectives and pool the obtained data thus averaging out differences in interests that might exist. Why Strong's often reiterated findings about intra-teacher group variations are not heeded remains a mystery (11, p. 531).

The studies first reviewed in this section demonstrate significant personality differences among subject matter field and curricular groupings of practicing teachers. A number of studies also demonstrate significant differences among practicing teachers classified according to the kind of institution or preparation program pursued. Other studies report significant differences on these same variables among similar subgroups of teaching candidates.

The research evidence cited above and the comment of Getzels and Jackson attest not only the feasibility but also the advisability of

basing the analysis proposed for the present study (1) on curricular sub-groupings, (2) on subject matter field groupings, (3) on type of training program, and (4) on teaching experience of Education students.

II. PERSONALITY VARIABLES AND SOCIAL CATEGORY CLASSIFICATIONS

It appears more meaningful to examine teachers and prospective teachers in sub-groups rather than treat them as a homogeneous occupational group. Evidence from literature reviewed thus far indicates that classification by curriculum major, subject matter field of concentration, and kind of training program yield significant differences between personality variable means. The literature also suggests sub-groupings based on selected personal status characteristics.

Probably the most meaningful and most essential classification is one based on sex. Other classifications suggested in Hypothesis 1 are those based on marital status, on age, and on the social status variable, subjective socio-economic status. Literature related to the hypotheses based on the four personal status categories is presented separately for each.

Earlier in this chapter mention was made of the inclusion of different keys for different occupational groups to assist counselors and researchers in interpreting interest inventory scores. It is equally important that the sex of the respondent be taken into account. Within occupational categories separate keys are applied to men and women. In a similar manner, research manuals accompanying personality inventories and values scales typically include norms for men and women separately. It consequently appears advisable when studying personality variables to

treat male and female sub-groups separately for at least part of the analysis. Several studies that did so are reported below.

Male-Female Differences Among Practicing Teachers

A number of studies referred to earlier in this chapter also reveal differences between male and female teachers on various personality dimensions. Ryans' six-year study of teacher characteristics reported, on the basis of Teacher Characteristics Inventory scores, that male teachers at both the elementary and secondary levels appeared markedly more emotionally stable than female teachers. In addition to this difference, at the elementary level, female teachers scored higher than their male counterparts on the scale measuring responsible, systematic and businesslike classroom behavior. Men, on the other hand, scored higher on attitude toward democratic pupil practices, and also on inclination toward permissive, child centered educational viewpoints. There were no significant sex differences between elementary teachers on the other six scales in the battery (31, p. 296).

Differences between male teachers and female teachers at the secondary level were even more pronounced. When the 300 item inventory was applied the two sexes differed on six of the ten scales. Similar male-female differences were evident when the secondary teachers were treated by subject matter field groups (31, pp. 296-298).

In a study completed in 1961, von Fange administered the Myers-Briggs Type Indicator to a sample of 1,084 Education students, practicing teachers, and administrators. Von Fange identified sex differences with respect to the thinking-feeling dimension males more frequently

falling into the thinking category, females into the feeling category (34, pp. 105-106).

In a study of graduate Education students, reviewed by Getzels and Jackson, female teaches at North Texas College scored higher (mean = 76) than their male counterparts (mean = 61) on the Minnesota Teacher Attitude Inventory (11, p. 512).

The above studies indicate that male teachers and female teachers differ on certain personality measures. The studies indicate no significant differences on other dimensions. There is also evidence to indicate that these differences also exist among teaching candidates.

Male-Female Differences Among Teaching Candidates

Data gathered on teaching candidates at the University of California, Los Angeles, and analyzed by MacLean, Gowan, and Gowan, reveal sex differences in future teachers as well. Males scored significantly higher on the Minnesota Multiphasic Personality Inventory F and psychopathic deviate scales, also on the Allport-Vernon-Lindzey Study of Values theoretical, political, and economic dimensions. Females had a higher aesthetic-social-religious orientation and scored higher on MMPI scales for L, hypochondriasis, hysteria, psychoasthenia, and responsibility. On the basis of a further analysis of the data by subject field of concentration the researchers report,

. . .When totals are broken down by teaching areas, however, most of the differences become statistically insignificant. This may be because of the decrease in size of sample, and the increasing similarity between men and women when vocational interest is held constant. The results show that the means for women fall near the norms for a college population, while men constitute a selected sample, particularly in personality (22, p. 672).

Apparently, it is meaningful to look at sex differences in a future teacher sample. Sex differences within subject matter fields of concentration are not as apparent. This is consistent with the theory presented in Chapter II. Sub-groups of teachers are likely to be homogeneous because of more intimate contact between members.

Differences Among Classifications Based on Marital Status

Ryans' research revealed significant differences on four of the ten Teacher Characteristic Schedule scales when teachers were classified by marital status. Single teachers scored higher on the average than married teachers with respect to responsible, businesslike classroom behavior, and on verbal understanding. Married teachers scored higher on emotional stability and on the scale measuring stimulating classroom behavior (31, p. 299).

Both samples used in the survey indicated significant differences on four variables at the elementary level of teaching and on three variables at the secondary level. These differences were also reported when the secondary group was broken down into subject-matter areas. The latter analysis led the author to conclude:

Quite apart from the actual differences in particular characteristics, it is important to note that the patterns of differences are not the same for teachers responsible for different grades and subject matters (31, p. 301).

Unfortunately, the report makes no mention of an interaction effect comparing age and marital status. It may well be that a number of the differences are attributable to age differences, married teachers having a mean age typically greater than their single counterparts. In the same manner, the differences might be attributable to length of

teaching experience. For these reasons, it is difficult to predict what the differences would be in a sample of Education students who have had no teaching experience.

Differences Among Classifications Based on Age

Ryans' reports his findings on two major samples, namely a Survey Sample (N = 1,640) and a Basic Sample (N = 978). In relation to age he states,

There appears to be little doubt about the existence of significant differences between teachers comprising different age groups, so far as a number of the teacher characteristics is concerned. . . . Among 60 different F tests computed with the data for these teachers, 45. . . were found to be significant at or beyond the .05 level. Generally speaking, scores of older teachers (55 years and above) showed this group to be at a disadvantage compared with younger teachers, except in. . . systematic and businesslike classroom behavior, and. . . learning-centered, traditional educational viewpoints (31, p. 289).

The author also adds that this cross-sectional approach has not answered the question,

. . . As to whether these age differences are dependent primarily on changes in the teacher as he grows older, or on cultural influences on teachers, particularly during the time they were in college, which differ substantially for the presently older teacher groups. . . as compared with the younger age groups (31, p. 292).

The study likewise does not answer a question raised earlier, namely, do these differences arise as a result of teaching experience? They may of course also result from the increasing selectivity caused by attrition from the profession of teachers with particular personality characteristics.

Whether the personality differences identified in the group of practicing teachers have any relevance to or foundation in differences

among teaching candidates is of course unanswered by Ryans' study and remains open for testing.

Differences Among Classifications Based on Social Background of Teachers

The social class strata is regarded by sociologists and anthropologists as an important set of subcultures in a society in that each stratum develops a unique set of value orientations, attitudes, language habits, manners, and other appropriate cultural attributes. These develop as Charters states, because,

. . .Personal interaction tends to be limited between members of the different classes but relatively intense within class strata, a circumstance which favors the emergence of unique cultural patterns and value systems within each class (4, p. 730).

On the basis of social class differences noted above, we might hypothesize that there would be greater changes in attitudes and behavior patterns among teachers with certain socio-economic backgrounds (say the lower or upper strata) than among others. If teachers could be regarded as belonging to a homogeneous occupational group we would hypothesize a homogenizing effect among teaching candidates during the period of preparation for and induction into the profession. On the other hand, if teaching were treated as a collectivity of occupational sub-groups, probably no homogenizing in the prospective teacher body would be evident. Within each sub-group of the collectivity, however, we would anticipate decreasing variability in attitudes when teachers were classified by socio-economic background.

Although many studies reviewed reported attitude change among practicing teachers and to a lesser degree among teaching candidates, and change within sub-groupings of teachers and prospective teachers,

the investigator was unable to find any research reports on attitude change among practicing or aspiring teachers related to socio-economic status.

The literature reviewed generally supports the analysis proposed for testing the hypothesis based on personal status categories. Research evidence especially supports an analysis based on the sex of teaching candidates. To a somewhat lesser degree it supports an analysis based on age and marital status although here certain confounding influences have not been clearly accounted for. Since age, marital status, and teaching experience are typically highly correlated, and since the literature reviewed does not partial these out, it is not clear which contributes most to the attitude differences reported. Using Merton's terminology they are probably mutually sustaining but this too has not been unequivocally demonstrated.

Although none of the studies reviewed analyzed the attitudes of Education students on the basis of their social class background, since the attitudes students bring with them to college have some foundation in their socio-economic background, it does not appear unreasonable to test an hypothesis that Education students classified by socio-economic level differ in attitudes.

III. PERSONALITY VARIABLES AND CLASSIFICATIONS BASED ON ACADEMIC PROFICIENCY

Ryans' teacher characteristics study revealed significant differences between groups classified according to their self-reported academic success while in college. Significant F ratios are reported

for eight of the ten schedule scales. Teachers who thought of themselves as having been outstanding students scored higher than the other groups on seven of these, namely, on (1) friendly, understanding classroom behavior, (2) responsible, businesslike classroom behavior; (3) stimulating, imaginative classroom behavior, (4) favorable attitudes toward pupils, (5) favorable attitude toward democratic pupil practices, (6) permissive, child-centered educational viewpoints, and (7) verbal understanding. Except for verbal understanding, mean scores decrease in a fairly orderly fashion as the good student, average student, and poor student groups are considered. To use Ryans' words,

The conclusion seems inescapable that there is a highly significant relationship between academic success in college and such characteristics as those with which the study was concerned. . . (31, p. 314).

Among the results of Miller and Erwin's study of twenty-nine senior and ninety sophomore medical students on cynicism, anxiety, and humanitarian attitude scales, was their report that students successfully meeting the academic requirements were significantly more anxious than those who were on probation (24, pp. 1089-92).

The two studies reviewed demonstrate significant differences in attitudes when teachers and medical students were classified according to level of academic achievement. Probably similar differences exist between Education students grouped on the academic proficiency dimension. No study reviewed reported using this criterion on future teachers. Reference group theory predicts that such differences exist in any group. Being rewarded by the formal positive sanctions of the Education institution has an effect on one's self-concept. This may

affect the degree to which he will feel the need to conform to the norms of his membership group as opposed to conformity with the norms of the all-inclusive Education profession. The hypothesis concerning attitude differences among Education students classified by academic proficiency appears worthy of testing.

IV. PERSONALITY VARIABLES AND CLASSIFICATIONS BASED ON CATEGORY OF POSITION ASPIRED TO

No research encountered refers directly to this hypothesis. If the process of anticipatory socialization is at work then differences between groups of Education students aspiring to different categories of positions would be anticipated. Von Fange's findings, although somewhat inconclusive, are related to the hypothesis based on category of position aspired to. Using the Myers-Briggs Type Indicator, von Fange found that Education students, practicing teachers, and administrators were significantly different in distribution of personality type from the general population. He hypothesized that a pyramidal differentiation in personality types occurs as one moves from a consideration of the general population to Education students, teachers in service, principals, and superintendents, due to an increasing selectivity within the teaching profession. The hypothesis was supported only in part, and the support lay chiefly in the sharp differences between the general population and those in the field of Education. Secondly, the female sample exhibited some significant pyramidal characteristics.

In addition, von Fange found no significant differences in

preference-type between students who expressed a preference for administration in the future rather than for teaching. There were similarly no significant differences in preference-type distribution between those who preferred to teach at the elementary or junior high level as contrasted with those who preferred the senior high level; and between combined mathematics and science majors and those who had selected other majors (34).

The hypothesis based on category of positions aspired to appears sound when examined in the light of reference group theory. On the basis of von Fange's findings, and the relatively high correlation between three of the OPI scales used in the present study and three Myers-Briggs scales (3, p. 46), we might predict no significant differences between the administrative and the teaching categories.

V. PERSONALITY VARIABLES AND CLASSIFICATIONS BASED ON TIME SPENT IN PRE-SERVICE TEACHER EDUCATION

The literature reviewed above reveals differences on personality variables among sub-groups of practicing and prospective teachers. The literature reviewed below summarizes studies of attitude change among college students generally, then among students preparing for membership in several professions, and thirdly, among prospective teachers.

Attitude Change Among College Students

Newcomb's Bennington study is a milestone among studies of attitude change in college students. The longitudinal approach used to study change in attitudes was one of the notable strengths of this

research. Newcomb's study revealed that an individual's attitudes tend to change as he moves into new groups or changes his group allegiances.

Students enrolled at the newly opened Bennington College for women were largely from urban, upper-income families whose social attitudes were conservative. Members of the faculty of the college were, on the other hand, predominantly liberal. Newcomb noted a marked change in attitudes among students during the period 1935 to 1939. The attitude shift was from conservative freshmen, whose attitudes resembled those of their parents, to liberal seniors, sharply divergent from their parents. Attitude change was only slightly related to the courses of study pursued. The initial differences between Social Studies and Science and Music majors increased only slightly during the four years (26, p. 148). Not all students changed, and not all changes were in the same direction; however, the mean of attitude changes weighed heavy in the direction of more liberal attitudes (26, pp. 23-37). There was also a trend, not statistically significant, for seniors to be more homogeneous in attitudes than freshmen (26, p. 147).

Newcomb reports that liberal students were found to be highly motivated to achieve independence from their families and to achieve leadership and prestige in the college group. They were more likely to adopt the college norms. On the other hand, students who were conservative in their senior year were found to be self-defensive in personality make-up because of feelings of personal inadequacy. They either lacked self-esteem and defended themselves by withdrawal from the college community or if they expressed higher self-esteem insulated themselves

from Bennington community influences by maintaining strong family ties (26, chapters 14-17). To summarize, the extent to which the Bennington students desired to "belong" on campus determined the extent of shift in their social attitudes in the direction of the prevailing liberal attitudes on campus.

In his consolidation of research on attitudes and values of American college students and the effects of college experience upon these, Jacob (17) states that after four years students seem more concerned with status achievement and prestige. Finding that there was more homogeneity and greater consistency of values at the time of graduation than at entrance to college, Jacob concludes that the college socializes but does not liberalize the individual. In this regard Jacob's conclusions are somewhat at variance with those of Newcomb. Jacob adds that neither curricular pattern, the instructional method, nor the instructor has much of an impact upon students' values.

The studies of both Newcomb and Jacob reveal attitude shifts among students in college. The key finding in Newcomb's research, consistent with reference group theory, was that if students desired to belong to a group their attitude change would be in the direction of the prevailing attitudes of the group. Although he does not attempt to account completely for it, Jacob notes a decreasing variability among college students as they proceed from freshman to senior year.

The two studies reviewed deal with change in attitudes among college students generally. Below is a review of research on attitude change among college students within more homogeneous sub-groups, namely, within professional training programs.

Attitude Changes Among Future Practitioners in Professional Preparation Programs

Studies have been made of attitude and other personality changes among groups of practitioners in several professions. Other studies have been carried out among prospective professionals while the latter were pursuing their preparation program. In a majority of the studies reviewed, cross-sectional comparisons between years provided the evidence from which conclusions were drawn. A few studies were longitudinal; the cross-sectional ones are reported first.

Cross-sectional studies of attitude change among prospective nurses and medical doctors. Eron (10, pp. 24-27) conducted an attitude study of prospective nurses. Groups of nursing students at different stages of preparation attending Yale and the University of Washington schools of nursing were administered five Likert-type attitude scales. Three of these were standardized scales measuring political-economic conservatism, authoritarian attitude, and general anxiety. Two, a cynicism scale and a humanitarianism scale were especially designed for the study.

Eron reports a consistent trend for more advanced students to receive lower scores on the authoritarianism scale, and to score significantly lower on the cynicism and humanitarianism scales as well. Results in the two schools paralleled each other. Eron states that it would be expected that differences between individuals would tend to cancel each other out in a haphazard manner so that no consistent differences between groups would appear. Since differences did appear,

Eron reasons that basic changes in attitudes had occurred.

A study of medical students, comparing them as well with nurses and law students corroborated Eron's earlier findings that the educational experience in a professional preparation program has a profound effect on the attitudes of students. Eron contends that medical students are quite different when they graduate than they were when they first entered medical school, and despite individual differences among them, seniors seem to "be cut from the same cloth" (9, p. 25).

Three variables (cynicism, humanitarianism, and anxiety) were common to Eron's nursing, law and medical studies. Since on these three variables changes in mean scores of the three samples were not in the same direction, Eron concludes that the attitude changes were not merely an effect of increasing maturity (9, p. 31).

Rosinski (30, pp. 1016-1022) administered attitude tests to a sample of 166 freshmen and 134 seniors in the medical college of the Virginia School of Medicine. The instrument consisted of five statements expressing a desirable attitude and five an undesirable attitude on each of seven objectives concerning attitudes to be achieved in the medical curriculum. He found significant changes in six of the seven attitude objectives, four being in the direction hypothesized, two in the opposite direction. The variances on three of these objectives decreased, that is, the group became more homogeneous; on two others it increased; there was no significant change on the remaining two.

Although attitudes on but four of the seven objectives changed in the hypothesized direction, it is noteworthy that a significant change

in attitudes occurred on six of the seven objectives measured and that the group became more homogeneous on three of them.

A Cornell University Medical college study is also of interest in that it is the only study reviewed reporting aspiration changes. Kendall and Selvin found that the number of students aspiring to specialty practice increased significantly, from 35 per cent in the first year to 74 per cent in the fourth year. The second and third year percentages were, respectively, 41 and 56 per cent (19, p. 156).

Longitudinal studies of attitude changes among prospective professionals. Coe's study of freshmen nursing students in which a twenty-item instrument was administered at the beginning and end of the first year demonstrated significant shifts in self-concepts of students who continued to the end of the year. Coe reports increased identification with nursing situations during this time² (5, pp. 49-52).

In another longitudinal study involving ninety medical students, fifteen of whom were in a comprehensive care program at the University of Louisville School of Medicine, Miller and Erwin applied cynicism, humanitarianism, and anxiety scales and five scales assessing attitudes toward health supervision, doctor-patient relationships, team concepts, social integration, and emotional factors. The three-year study indicated that although there were attitude changes on a number of dimensions for the

²It is interesting to note that a substantially similar conclusion was reached by Huntington in a cross-sectional study of 1,832 medical students in three medical schools. Eighty-three per cent of the students in the fourth year thought of themselves "primarily as doctors" compared with 31 per cent in the first year (15, p. 180).

whole sample, the sub-group in the comprehensive care program increased significantly more than the control group on their evaluation of the importance of team work with other specialties; and they increased significantly less in cynicism. Other results though not statistically significant were in the direction of less anxiety and less decrease in humanitarianism by the comprehensive care sub-group (23, pp. 422-428).

The two longitudinal studies, one on student nurses, the other on medical students, reveal changes in mean attitudes among future practitioners which cannot be explained in terms of increasing selectivity and attrition. It is evident that individuals do change in attitudes while pursuing a professional preparation program. It is likewise apparent from the Miller and Erwin study that a particular program may serve to shape attitudes to a greater extent than another.

The cross-sectional studies also reveal attitude differences between freshmen and seniors in professional education programs. Reasons given for these differences are of course less tenable than those based on longitudinal data. Nevertheless, both kinds of studies have demonstrated differences between freshmen and seniors among nursing, medical, and law students. And there is a consistent trend for junior and sophomore mean scores to fall between these. Similar attitude differences have also been noted among prospective teachers.

Longitudinal Studies of Attitude Change Among Prospective Teachers

Getzels and Jackson report that the most popular instrument for measurement of teacher attitudes is the Minnesota Teacher Attitude Inventory (MTAI) (11, p. 508). In a longitudinal study reviewed by Getzels

and Jackson, attitudes measured by this instrument show a significant increase in means in each of three groups of students proceeding through a teacher education program and a significant decrease in beginning teachers after six months' teaching from the scores they achieved just prior to graduation (11, p. 509).

Another study reviewed by Getzels and Jackson reports significant increases on mean MTAI scores of 393 Education seniors at a Mid-western teachers college due to the effect of practice teaching. The mean before practice teaching was forty-three; at the end of practice teaching the mean was fifty-four, a statistically significant increase (11, p. 515).

It is evident that college experience will have an effect on student attitudes. Research findings support the contention that the attitude changes among college students are not merely a result of increasing maturity. These attitude changes are related to the specific experience the student is subjected to. Students who leave after four years differ from freshmen not only in academic knowledge but in non-cognitive areas as well. Scores achieved by second and third year students on attitude measures usually fall between those of freshmen and seniors. This finding is true for college students as a whole and for nursing and medical student sub-groups. It appears to hold true for teaching candidates as well.

VI. LITERATURE RELATED TO THE DEVELOPMENT OF THE EDUCATION PROFESSION ASPIRATION SCALE

As stated earlier in this paper (supra, p. 31), occupations have

been ranked in hierarchical fashion as early as 1924. Counts, in that year (7, pp. 16-27), included eighty-two Minneapolis school teachers, sixty-two University of Minnesota agriculture freshmen, sixty Milwaukee trade school seniors, and two hundred forty-six seniors from four Connecticut high schools in his study of the social standing of forty-five occupations. Among these were five Education positions.

Counts asked his subjects to arrange the forty-five occupations in order of social standing.³ In spite of the difficulty acknowledged by the author of rating the occupations in the method prescribed, the results show a remarkable agreement among the six sub-groups involved. The coefficients of correlation were all above .90. Counts, after further analysis, concluded that there was little or no effect on occupational judgment from the following influences: (1) social background of subject, (2) vocational expectation of subject, (3) section of country represented, and (4) occupation of subjects' parents.

On the basis of his evidence, Counts sums up with these words,

. . .It would seem that, according to the views of these groups of students and teachers, occupations differ greatly in social status and that the position of a particular occupation is fairly constant (7, p. 22).

He adds, however, that ". . .while groups agree, individuals tend to disagree," and also that there is greater agreement on ranking some

³The exact question wording in the Counts' study was as follows:

In the following list are forty-five occupations which you are to arrange in the order of their social standing. After that occupation which is most "looked up to" place the number "1"; after that which occupies second place in this respect, the number "2"; and so on, until finally you place the number "45" after that occupation which receives the lowest social rank (7, p. 17).

occupations than others. Three reasons suggested for disagreement with respect to placement are given as: (1) unfamiliarity with the occupation, (2) uncertain status of the occupation, and (3) failure to follow instructions (7, pp. 24-25). Of these, we might hypothesize that the last factor is least influential as it would not account for the varying degrees of agreement on ranking the forty-five occupations. Counts concludes that there are clear-cut differences in the social status of occupations, consequently, he states, some occupations receive a much higher social rating than others (7, p. 26).

As stated above, the forty-five occupations ranked in Counts' study included five Education positions. These ranked as follows: (1) college professor, second; (2) superintendent of schools in a city of 50,000 inhabitants, seventh; (3) high school teacher in a city high school, ninth; (4) elementary school teacher in a city school system, thirteenth; and (5) rural school teacher who teaches twenty pupils in a one-room rural school, nineteenth (7, p. 26).

Hartman, in 1934 (13, pp. 144-152) used a personal interview technique with a sample of one-hundred adults representing various walks of life to rank in order of their admiration for the vocation a series of twenty-five cards on which one occupational title was written. The three Education positions mentioned ranked in comparison with each other as follows: (1) college professor, (2) high school teacher, and (3) elementary school teacher. The same three positions appeared in a 1948 study of eighteen occupations ranked on their relative esteem by 1,616 Indiana University students. As might be expected, the Richey, Fox, and Fauset

study produced the same relative rankings of the three positions (28, pp. 33-36).

Smith (32, pp. 269-273) developed a scale of occupational prestige of one hundred general occupations evaluated by three hundred forty-five university and high school students from different parts of the United States. Subjects rated each occupation by sorting cards bearing occupational titles from high to low prestige status on the basis of order of rank at a dinner table honoring a celebrity, and then by assigning each occupation a value on a scale of one hundred points. Mean ratings were then calculated. Of pertinence to the present study is the ranking of the two Education positions. The position of college president or chancellor of a large university ranked sixth, and teacher of a school of one thousand or more pupils ranked twenty-fifth.

In developing their Index of Status Characteristics, used to assign individuals to various social classes, Warner, Meeker, and Eells (35, pp. 273-277) classified occupations into seven categories, one of which was professionals. Occupations within each classification were then given ratings from one to seven. The rating assigned to professional occupations depended upon the amount of training and education needed to carry out the particular job. High school superintendents along with a number of other high ranking professionals received a rating of one. High school teachers, trained nurses and others were rated two on the seven point scale and grade school teachers, optometrists and others were rated three--the lowest rating given any professional group.

To date, the most representative population to be sampled in

developing a hierarchy of occupations on a prestige dimension was the 1946 National Opinion Research Center study which interviewed a cross-section of 2,900 Americans on their evaluation of ninety American occupations. Hatt and North's summary of the findings (14, pp. 277-283) lists college professor as ranking eighth along with scientist and United States Representative in Congress; instructor in the public schools ranked thirty-fourth along with economist and building contractor; and public school teacher ranked thirty-sixth.

A table summarizing the rankings of Education positions included in the above studies is given below. Table I shows no discrepancy in the order of ranking the Educational positions used in any of the six studies. This was true even though one study had respondents rate the occupations on social standing, another on admiration, the third on their relative esteem, the fourth on prestige status, the fifth on social class, and the sixth on general standing. Since the Educational positions in Table I overlap, it was possible to combine all six into a single hierarchy. The six positions in the resulting hierarchy rank in the order presented in the above table.

Probably the most comprehensive study involving ranking Education positions and the one most pertinent to the present study is the Kennedy, Black, and Clarke study undertaken at the University of Alberta in 1960-61. Questionnaires were administered to 1,035 teaching candidates in the Faculty of Education. Respondents were to rate three groups of ten Education positions, first in order of importance and then according

TABLE I
SUMMARY OF EDUCATION POSITION RANKINGS IN SIX STUDIES
OF OCCUPATIONAL RANKINGS

Education Position	Counts	Hartman	Richey, Fox, and Fauset	Smith	Warner, Meeker, and Eells	North- Hatt
College President	a	a	a	1	a	a
College Professor	1	1	1	a	a	1
Superintendent of Schools	2	a	a	a	1	a
High School Teacher	3	2	2) ^b	2	2 ^c
Elementary School Teacher	4	3	3	2))	3	3
Rural School Teacher	5	a	a	a	a	a

^aOccupation title not included in this study.

^bActual title was teacher of a school of 1,000 or more pupils.

^cActual title was instructor in the public schools.

to the job they themselves would prefer in twenty years provided they then possessed the required training and experience. Most relevant to the present study is the ranking in order of importance. All three rankings are reproduced in Table II. Noteworthy is the overlap in positions included within each group. Unfortunately, there is not enough overlap to make possible the construction of one or even two hierarchies in place of the above three.

All studies reviewed confirm the feasibility of constructing an Education position hierarchy of prestige rankings. None completely

TABLE II

EDUCATION POSITIONS RANKED IN ORDER OF IMPORTANCE^a

Group I	Group II	Group III
1. Deputy Minister of Education ^b	1. Director of Curriculum Department of Education ^b	1. Principal of a high school ^b
2. Dean, Faculty of Education ^b	2. Chief Superintendent of schools, Department of Education ^b	2. Assistant Superintendent of a large city system ^b
3. Department of Education Superintendent or a Division or County	3. Director of Administration, Department of Education ^b	3. Assistant Superintendent of a Division or County
4. Dean, Faculty of Arts and Science	4. Divisional Chairman, Faculty of Education ^b	4. Principal of an Elementary school ^b
5. Superintendent of a large city system ^b	5. Department of Education, superintendent of a Division or County ^b	5. Vice-Principal of a high school ^b
6. Executive Secretary, Canadian Education Association	6. High school inspector ^b	6. Department head in a high school ^b
7. Secretary-Treasurer, Canadian Teachers' Federation ^b	7. Assistant superintendent of a Division or County	7. School guidance counselor ^b
8. High school inspector ^b	8. Assistant superintendent of a Division or County	8. High school teacher ^b
9. Executive Secretary, The Alberta Teachers' Association ^b	9. Assistant superintendent of a large city system ^b	9. Vice-Principal of an elementary school ^b
10. General Secretary, Alberta School Trustees' Association	10. Assistant Secretary, Alberta School Trustees Association	10. Elementary school teacher ^b

^aTaken from Kennedy, Black, and Clarke, 1961, pp. 31, 32, 33.

^bIndicates positions identical with or similar to ones used in the present study.

serves the needs of the present study. Of significance to the research design of the present study is another of Kennedy, Black, and Clarke's findings. Although their sample included two groups of first-year students, one of each of second through fourth, a group of graduates from other faculties enrolled in Education, and a group of practicing teachers, the researchers report, "All groupings. . .agreed on the order of importance of the positions, that is, all inter-group correlations are significant at the .01 level of confidence" (20, p. 33).

In other words, the researchers report little relationship between the program or year of program one is in and the rating he assigns various occupations or positions. On the basis of this finding and those of Counts, it appears that any random or chance group of individuals will rank a series of occupations in order of importance or prestige in much the same way. This evidence supports the approach used in the present study of having Education seniors and graduate Education students provide the replication of ratings of Education positions. This replication provides the data necessary for constructing a prestige hierarchy on which the Education Profession Aspiration Scale is based (vide, infra, Chapter V).

Although it is anticipated that a rank order scale constructed from the Education seniors' ratings will not differ significantly from one constructed from graduate Education students' ratings, nonetheless, this will be tested.

VII. SUMMARY

The present chapter is essentially a review of studies relevant to the hypotheses of this thesis. Most of these studies are concerned with the relationship between selected personality variables and the preparation program pursued by candidates seeking admission to a profession. Several studies reviewed focused on the teaching profession. These studies in general reported that:

1. Some significant differences on personality variables were evident when practicing teachers were classified (a) by type of teacher preparation program, (b) by curriculum major, and (c) by subject matter field of concentration.
2. Some significant differences were evident when prospective teachers were classified (a) by type of teacher preparation program, (b) by curriculum major, and (c) by subject matter field of concentration. In addition, one study reported that prospective teachers educated in teachers colleges appeared to display personality configurations more like practicing teachers than did those educated in subject matter field departments of universities.
3. Practicing teachers classified by social categories, namely, (a) sex, (b) marital status, and (c) age, differed significantly on several personality variables. No report was given of the possible interaction effect between age, teaching experience and marital status.
4. Prospective teachers classified by sex differed significantly on several personality variables.

Research findings from cross-sectional and longitudinal studies

conducted among college students generally, and among students preparing for careers in medicine, nursing and law tended to indicate that:

1. The attitudes of students in college changed as they progressed from freshman to senior year, and that if students desired to belong to a group, their attitude change typically was in the direction of the prevailing attitudes of the group.

2. Attitude changes among students were not merely a result of increasing maturity.

3. Aspirations changed as students progressed from first to fourth year.

4. Different programs of preparation for a given profession tended to have differential effects upon attitudes.

5. Significant attitude differences were evident when students were classified by academic achievement level.

Some examples of research related to the development of one of the instruments used in the present study, namely, the Education Profession Aspiration Scale, were also presented in this chapter. In general, the studies reviewed attested to the feasibility of constructing a scale of Education positions ranked in order of their relative prestige status.

REFERENCES FOR CHAPTER III

1. Andrews, John H. M. "Administrative Significance of Psychological Differences Between Secondary Teachers of Different Subject Matter Fields." Unpublished Doctoral dissertation, University of Chicago, 1957.
2. Blum, Lawrence Philip. "A Comparative Study of Students Preparing for Five Selected Professions, Including Teaching," Journal of Experimental Education, XVI (September, 1947), 31-65.
3. Center for the Study of Higher Education. Omnibus Personality Inventory--Research Manual. Berkeley, California: University of California, 1962.
4. Charters, W. W. Jr. "The Social Background of Teaching," Chapter XIV in N. L. Gage, editor. Handbook of Research on Teaching. Chicago: Rand McNally & Co., 1963. pp. 715-813.
5. Coe, Rodney M., "Self-Conception and Professional Training," Nursing Research, XIV (Winter, 1965), 49-52.
6. Cook, W. W., N. C. Kearney, P. B. Rocchio, and A. Thompson. "Significant Factors in Teachers' Classroom Attitudes," Journal of Teacher Education, VII (September, 1956), 274-279.
7. Counts, George C. "The Social Status of Occupations: A Problem in Vocational Guidance," School Review, XXXIII (January, 1925), 16-27.
8. Darley, John G., and Theda Hagenah. Vocational Interest Measurement: Theory and Practice. Minneapolis: University of Minnesota Press, 1955.
9. Eron, Loenard D. "The Effect of Medical Education on Attitudes: A Follow-Up Study," Journal of Medical Education, XXXIII (October, 1958), 25-33.
10. _____. "The Effect of Nursing Education on Attitudes," Nursing Research, IV (June, 1955), 24-27.
11. Getzels, J. W., and P. W. Jackson. "The Teacher's Personality and Characteristics," Ch. XI in N. L. Gage, editor. Handbook of Research on Teaching. Chicago: Rand McNally & Co., 1963), pp. 506-582.
12. Guba, E. G., P. W. Jackson, and C. E. Bidwell. "Occupational Choice and the Teaching Career," Education Research Bulletin, XXXVIII (January, 1959), 1-12.

13. Hartman, George W. "The Prestige of Occupations," The Personnel Journal, XII (October, 1934), 144-152.
14. Hatt, Paul K., and C. C. North. "Prestige Ratings of Occupations" in Sigmund Nosow and William H. Form, editors. Man, Work and Society. New York: Basic Books, Inc., 1962, pp. 277-283.
15. Huntington, Mary J. "The Development of a Professional Self-Image," in Robert K. Merton, George G. Reader, and Patricia L. Kendall, editors. Student Physician. Cambridge, Mass.: Harvard University Press, 1957, pp. 179-187.
16. Jackson, Philip W., and Egon G. Guba. "The Need Structure of In-Service Teachers: An Occupational Analysis," School Review, LXV (Summer, 1957), 176-196.
17. Jacob, Philipe. Changing Values in College: An Exploratory Study of The Impact of College Teaching. New York: Harper, 1957.
18. Kearney, N. C., and P. D. Rocchio. "The Effect of Teacher Education on the Teacher's Attitude," Journal of Educational Research, XLIX (May, 1956), 703-708.
19. Kendall, Patricia L., and Hanan C. Selvin. "Tendencies Toward Specialization in Medical Training," In Robert K. Merton, George G. Reader, and Patricia L. Kendall, editors. The Student Physician. Cambridge, Mass.: Harvard University Press, 1957, pp. 153-174.
20. Kennedy, Kathleen, D. B. Black, and S. C. T. Clarke. "Positions in Education," The ATA Magazine, XLII (October, 1961), 31-33.
21. Lewin, Kurt. "Time Perspective and Morale," Civilian Morale, G. Watson, editor. Boston: Houghton, 1942. Cited by David Krech and Richard S. Crutchfield, Theory and Problems in Social Psychology. New York: McGraw-Hill, Inc., 1948, p. 410.
22. MacLean, Malcolm S., May Seagoe Gowan, and John C. Gowan. "A Teacher Selection and Counselling Service," The Journal of Educational Research, XXXVIII (May, 1955), 669-677.
23. Miller, Louise B., and Edmond F. Erwin. "Attitude Changes in Medical Students During a Comprehensive Care Program," Journal Of Medical Education, XXXVI (May, 1961), 422-428.
24. _____. "A Study of Attitudes and Anxiety in Medical Students," The Journal of Medical Education, XXXIV (November, 1959), 1089-1092.
25. Newcomb, Theordore M. The Acquaintance Process. New York: Holt, Rinehart and Winston, 1961.
26. _____. Personality and Social Change: Attitude Formation in a Student Community. New York: Dryden Press, 1943.

- _____. Social Psychology. New York: The Dryden Press, 1956.
28. Richey, Robert W., William H. Fox, and Charles E. Fauset. "Prestige Ranks of Teaching," Occupations, XII (October, 1934), 144-152.
 29. Rosenberg, Morris, Edward A. Suchman and Rose K. Goldsen. Occupations and Values. Glencoe, Ill.: Free Press, 1957.
 30. Rosinski, Edwin, F. "Professional, Ethical and Intellectual Attitudes of Medical Students," Journal of Medical Education, XXXVIII (December, 1963), 1016-1022.
 31. Ryans, D. G. Characteristics of Teachers. Washington: American Council on Education, 1960.
 32. Smith, Mapheus. "An Empirical Scale of Prestige Status of Occupations" in Sigmund Nosow and William H. Form. Man, Work, and Society. New York: Basic Books Inc., 1962, pp. 269-273.
 33. Strong, E. K., Jr. Vocational Interests of Men and Women. Stanford: Stanford University Press, 1943.
 34. Von Fange, Erich Alvin. "Implications for School Administration of the Personality Structure of Educational Personnel." Unpublished Doctoral dissertation, University of Alberta, Edmonton, 1961.
 35. Warner, W. L., Marcia Meeker, and Kenneth Eells. "Occupational Composition of Social Classes," in Sigmund Nosow and William H. Form, editors. Man, Work and Society. New York: Basic Books, Inc., 1962, pp. 273-277.

CHAPTER IV

INSTRUMENTATION AND METHODOLOGY

I. INSTRUMENTATION

General Information Questionnaire

The General Information Questionnaire (Appendix A), constructed especially for the proposed study, consists of twenty-two items. The purpose of the questionnaire was two-fold: first, to secure data regarding the characteristics of the sample population; and, second, to enable classification of Education students for testing the hypotheses involving this group. The questionnaire solicited the following information:

- (a) name
- (b) age
- (c) sex and marital status
- (d) background of education
- (e) teaching experience
- (f) length of time spent away from school or university
- (g) home background and present place of residence
- (h) peer associations
- (i) anticipated length of pre-service preparation
- (j) preferred teaching grade level.

The Omnibus Personality Inventory

The Omnibus Personality Inventory is a revised version of an

instrument recently developed by the Center for the Study of Higher Education expressly for research with "normal" college populations. Since it is designed for use in cross-sectional as well as longitudinal studies (2, pp. 1-3), it was selected for this study. Although it was felt that administration of the complete instrument, involving sixteen scales, might have been preferable, the large number of items (575), and the testing time (1 hour, 50 minutes), ruled this possibility out, especially when consideration was given to the three other instruments that were to be administered to the Education sample.

There is considerable overlap in items and a high correlation between a number of the OPI scales; furthermore, items on a number of the scales appeared to be of a threatening nature. Four scales were selected from the OPI battery on the basis of high KR-21 reliabilities, low overlap in items, and the apparent non-threatening nature of items. Other criteria for their selection are set forth in the description of each scale given below.

Thinking Introversion (TI) (60 items). This scale was selected to determine whether there are differences between various sub-groups of prospective and experienced teachers on "scholarly" orientation, that is, on their preference for abstract ideas and concepts on the one hand or preference for knowledge which has a more immediate and practical application. Thinking Introversion is defined as follows:

Persons scoring high on this measure are characterized by a liking for reflective thought, particularly of an abstract nature. They express interests in a variety of areas, such as literature, art, and philosophy. Their thinking tends to be less dominated by objective conditions and generally accepted ideas than that of thinking extroverts (low scorers). Extroverts show a preference for

overt action and tend to evaluate ideas on the basis of their practical, immediate application (2, p. 4).

Theoretical Orientation (TO) (32 items). Because of recent criticism of science programs by critics of public education, it was felt that some meaningful comparisons might be made between various prospective teacher groups on interest in science and the use of the scientific method of problem solving. Accordingly, TO was selected. This scale measures,

. . . Interest in science and scientific activities, including a preference for using the scientific method in thinking. High scorers are generally logical, rational, and critical in their approach to problems (2, p. 4).

Social Introversion (SI) (54 items). The teacher's function arising from the aim of education is, ". . . to stimulate initiative, critical thinking and ability to be intellectually self-directing" (3, p. 44). Social Introversion was selected because of its ability to assess interest in relating to others and being helpful to them. In light of the following description of the scale, a low score reflects greater desire to relate to and to help others.

The high scorers withdraw from social contacts and responsibilities. They display little interest in people or in being with them. The social extroverts (low scorers), on the other hand, seek social contacts and gain satisfaction from them (2, p. 6).

Estheticism (Es) (24 items). One of the tasks assigned to the school is ". . . to develop knowledge skills, and appreciation of the cultural heritage. . ." (3, p. 45). When consideration is given to this task, the interest of teachers and prospective teachers in artistic

and esthetics generally is of importance. In addition, this scale was selected for another reason. As mentioned earlier (supra, p. 47), McLean, Gowan and Gowan found the Allport-Vernon-Lindzey Aesthetic measure to discriminate meaningfully between subject matter field groups of prospective teachers. Since OPI Estheticism correlates .47 (2, p. 40), with the AVL Aesthetic dimension, the former was chosen because of the probability that it would discriminate in a similar manner between sub-groups of teaching candidates in the present study. A description of Es follows:

The high scorers endorse statements indicating diverse interests in artistic matters and activities. The content of the statements in this scale extends beyond painting, sculpture, and music and includes interests in literature and dramatics (2, p. 4).

The means and standard deviations of the four scales selected, based on the normative sample of 2,390 college freshmen at the University of California and San Francisco State College are respectively: (1) Thinking Introversion--34.8, 9.5; (2) Theoretical Orientation--18.8, 5.2; (3) Estheticism--11.5, 5.0; and (4) Social Introversion--20.7, 8.8 (2, p. 12). Written permission to reproduce these four scales was secured from the Center for the Study of Higher Education.¹

The Education Profession Aspiration Scale

The Education Profession Aspiration Scale (EPAS) was developed especially for this study and is based on another scale, the Education Profession Prestige Scale (EPPS). Since the construction of EPPS is

¹The investigator is indebted to Dr. Paul Heist, director of the Center for the Study of Higher Education at Berkeley, for permission to reproduce the four desired scales of the Omnibus Personality Inventory developed there. He is especially grateful in view of the moratorium that exists on reproducing this now copyright instrument.

somewhat involved, description of both EPPS and EPAS is left to Chapter V. Both instruments are reproduced in Appendix A.

The Education Profession Attitude Questionnaire

The Education Profession Attitude Questionnaire was designed especially for this study. The questionnaire consisted of twenty Likert-type items of official Alberta Teachers' Association policy as outlined in The Alberta Teachers' Association Policy Handbook, 1964 (1).

Respondents rated each stimulus item on a five-point scale choosing one of "strongly agree," "agree somewhat," "undecided," "disagree somewhat," or "strongly disagree" (Appendix A). Items were scored on a five-point scale, a value of five being awarded to the most positive alternative, and a value of one to the most negative. Because several of these items were made antithetical to ATA policy, in scoring these were reversed.

Based on official Alberta Teachers' Association policy, the Education Profession Attitude Questionnaire purports to measure socialization or "acculturation" to the professional organization.

Pretest. The Education Profession Attitude Questionnaire (EPAQ) was administered to four classes of Education seniors ($N = 149$) in the spring of 1964. On the basis of responses to the items, EPAQ was completely revised. The modified form of the instrument is included in Appendix A and is the one used in the present study.

The Spearman-Brown prophecy formula was used to calculate the reliability on equivalent halves. For the revised instrument this

yielded a reliability coefficient of .48. Since the twenty items correlated positively with total score, all were retained.

II. METHODOLOGY

Procedure

Permission to make contact with selected classes in the four undergraduate years of teacher education at the University of Alberta, Edmonton, was obtained first from the Dean of the Faculty of Education, secondly, from the department heads, and finally from each instructor of the participating classes.

The Education Student Attitude Inventory, a battery of paper and pencil tests, was administered in the 1964-1965 fall term to all students in the participating classes. Each battery included the following: (1) four Omnibus Personality Inventory scales, namely, (a) Thinking Introversion, (b) Theoretical Orientation, (c) Estheticism, and (d) Social Introversion; (2) the Education Profession Aspiration Scale; (3) the Education Profession Attitude Questionnaire; and, (4) the General Information Questionnaire. Students in the participating classes completed the four instruments during regular class periods.

Testing the Hypotheses

Where possible, parametric tests were used to test the hypotheses. The F ratio was employed in testing for homogeneity of variances. One-way analysis of variance was used in testing for significant differences between means when several means were involved, and the t test was used to test for significant differences between pairs of means. Pearson

product-moment correlations were calculated to test for relationships between variables of the interval or ratio type; t tests were employed in testing for the significance of these correlations. Spearman's rho was used to indicate correlations between paired measurements of ordinal data.

The Sample

The sample consisted of University of Alberta students in full time attendance registered in the four undergraduate years of the teacher preparation program in the Faculty of Education, Edmonton. This sample, used in testing all hypotheses but one, represents 79.2 per cent of the 2,504 students registered in the Faculty for the 1964-1965 session. The sample included two contrasting sub-samples, namely, a group with no teaching experience, and a second group who had earlier completed certification requirements and then had taught before returning to university. The former group is the main focus of this study.

Since questionnaires were administered in classes of the required Education courses in each of the four undergraduate years, several students not pursuing normal programs (persons who had taught and had completed evening credit or summer school courses, and those with Junior Elementary certification returning to improve their certification) were not part of the sample. The number of such individuals, most of whom had teaching experience, is not known. Because they formed part of the student body registered in the Faculty, it is probable, as a consequence, that the sub-sample having no teaching experience included well over 80 per cent of the possibles for this group. This is especially true when

allowance is made for a number of Education students who had withdrawn from the Faculty before ESAI was administered.

In addition to the major sample, four classes of Education students ($N = 149$) and forty-two graduate Education students enrolled in the 1963-1964 winter session served as a minor sample. The questionnaires administered to this sample late in the 1964 spring term provided the data necessary for constructing the Education Profession Prestige Scale and the Education Profession Aspiration Scale.

All 1,983 students constituting the major sample completed the General Information Questionnaire and the four Omnibus Personality Inventory scales (Thinking Introversion, Social Introversion, Theoretical Orientation, and Estheticism), and the Education Profession Attitude Questionnaire. A number of respondents did not complete several or all of the five items in the Education Profession Aspiration Scale (EPAS). EPAS appeared on the back cover of the Education Student Attitude Inventory and, although instructions at the bottom of the second last page informed respondents to turn over, may have been missed by some. In addition, a number of respondents misinterpreted EPAS. It was impossible to reconstruct their intended responses. For these reasons, in the analysis of data a different N appears for the EPAS items. EPAS N 's are somewhat smaller than the N for the other scales of ESAI.

Distribution of Sample

Table III summarizes several characteristics of the sample. A majority of the respondents ($N = 1,795$) were in a "regular" four-year Bachelor of Education program. Approximately one-tenth of the sample

TABLE III
DISTRIBUTION OF SAMPLE BY ROUTE, PROGRAM, AND YEAR

Year or Program	Elementary Route	Secondary Route	Vocational Route	Route Unknown	Total
First year Education	255	499	42	3	799
Second year Education	191	320	9	1	521
Third year Education	89	201	3	1	294
Fourth year Education	43	135	-	3	181
Sub-Totals	578	1155	54	8	1795
B.Ed program following another degree	25	150	12	1	188
Totals	603	1305	66	9	1983

(N = 188) chose to pursue teacher preparation following one or more degrees in another faculty.

The sample was somewhat disproportionately distributed in curricular preference. Approximately two-thirds (N = 1,305) were registered in or were anticipating choosing the secondary route preparing them for teaching the secondary grades. Somewhat less than one-third (N = 603) had chosen or preferred the elementary route. About one in thirty (N = 66) were registered in the vocational route. Nine respondents were either undecided or had not indicated what route they were in. In making comparisons by route and between years, since the N's for those in the vocational route were small, and since their numbers were not distributed proportionately among the years, this sub-sample was eliminated from a majority of the analyses.

Similarly, for testing hypotheses involving large numbers of sub-samples (e.g., major field of concentration), groups containing few individuals, e.g., individuals who identified themselves as psychology majors, sociology majors, industrial arts majors, and others, were eliminated from the analyses.

Description of Sub-Sample Having No Teaching Experience

Approximately nine-tenths of the sample population ($N = 1,780$) had no teaching experience. About three-sevenths of these were male ($N = 762$) and four-sevenths female ($N = 1,018$). Table IV indicates how these are distributed by route, year, and program. The proportions by route, year, and program approximate the distribution for the total sample. Of significance is the decrease in number of students registered in the first ($N = 782$) through the fourth years ($N = 118$). A large proportion of those who begin a teacher training program either do not complete four years of training before accepting a teaching position or discontinue before completing minimum requirements for certification. This may be a major source of error in making cross-sectional comparisons between years.

In an attempt to reduce the error from this source, respondents were asked to state the number of years of teacher education anticipated before teaching. Some of the analyses used only sub-samples of students anticipating four or more years of university preparation. Table V, page 91, summarizes the distribution of these individuals. Table VI, page 92, presents these figures distributed by sex.

The first and second year figures, especially the female N 's in

TABLE IV

DISTRIBUTION OF SUB-SAMPLE WITH NO TEACHING EXPERIENCE BY ROUTE, PROGRAM, YEAR, AND SEX

Elementary Route														Secondary Route				Vocational Route				Route Unknown				Totals			
Year	Male		Female		Total	Male		Female		Total	Male		Female		Total	Male		Female		Total	Male		Female		Total				
First year																													
Education	32	216	248	251	241	492	32	7	39	1	2	3	316	466	782														
Second year																													
Education	17	173	190	169	141	310	7	2	9	1	-	1	194	316	510														
Third year																													
Education	18	44	62	73	65	138	1	1	2	1	-	1	93	110	203														
Fourth year																													
Education	6	13	19	51	45	96	-	-	-	2	1	3	59	59	118														
Sub-Totals	73	446	519	544	492	1036	40	10	50	5	3	8	662	951	1613														
B.Ed.																													
following																													
another																													
degree	5	18	23	88	48	136	7	1	8	-	-	-	100	67	167														
Totals	78	464	542	632	540	1172	47	11	58	5	3	8	762	1018	1780														

TABLE V

DISTRIBUTION OF SUB-SAMPLES USED IN TESTING MAJORITY OF HYPOTHESES
(ELEMENTARY AND SECONDARY ROUTES, NO TEACHING EXPERIENCE)

Year	Number of Respondents Registered in			Number Anticipating Four or More Years of		
	Undergraduate Program			Pre-Service Preparation		
	Elementary	Secondary	Route	Elementary	Secondary	Route
	Route	Route	Unknown	Route	Route	Unknown
	Total			Total		
First year						
Education	248	492	3	743	60	246
						1
						307
Second year						
Education	190	310	1	501	45	132
						1
						178
Third year						
Education	62	138	1	201	36	104
						1
						141
Fourth Year						
Education	19	96	3	118	19	96
						3
						118
Sub-Totals	519	1036	8	1536	160	678
						6
						744
B.Ed. Program						
following an						
approved						
degree	23	136	-	159	23	136
						-
						159
Totals	542	1172	8	1722	183	814
						6
						903

TABLE VI

DISTRIBUTION BY SEX OF SUB-SAMPLE HAVING NO TEACHING EXPERIENCE
ANTICIPATING FOUR OR MORE YEARS OF PRE-SERVICE
PREPARATION BEFORE TEACHING

Year	Men	Women	Total
First Year Education	170	137	307
Second Year Education	94	84	178
Third Year Education	74	67	141
Fourth Year Education	59	59	118
Total	397	347	744

Table VI are significantly smaller than the number registered in the undergraduate teacher preparation program as a whole (Table IV). The former more nearly approximate the proportion of secondary to elementary route respondents presently in their sophomore and senior years, a ratio greater than three to one. In other words, a greater proportion of elementary than secondary majors, particularly women, leave university before completing four years of preparation. Similarly, the ratio of men to women in the first two years more closely approximates the ratio in the senior and sophomore years (Table VI), men slightly outnumbering women whereas women outnumber men approximately three to two in the first two years when all registered Education students are included (Table IV).

Description of Sub-Sample With Teaching Experience

One-tenth of the sample population ($N = 203$) had one or more years of teaching experience before returning to university to continue their undergraduate program in the Faculty of Education (Table VII).

TABLE VII

DISTRIBUTION OF SUB-SAMPLE WITH TEACHING EXPERIENCE BY ROUTE, PROGRAM, YEAR, AND SEX

Year	Elementary Route		Secondary Route		Vocational Route		Route Unknown		Totals			
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
First												
Year Ed.	3	4	7	5	2	7	3	-	-	11	6	17
Second												
Year Ed.	-	1	1	6	4	10	-	-	-	6	5	11
Third												
Year Ed.	8	19	27	28	35	63	1	1	-	36	55	91
Fourth												
Year Ed.	7	17	24	19	20	39	-	-	-	26	37	63
Sub-Total	18	41	59	58	61	119	3	1	4	79	103	182
B.Ed. program												
after another												
degree	-	2	2	9	5	14	3	1	4	12	9	21
Totals	18	43	61	67	66	133	6	2	8	91	112	203

The proportion of men to women approximated the distribution of the sub-sample with no teaching experience, that is, in the ratio of three to four. There was, however, a considerably different distribution in the proportion at each level of training. Whereas over three-quarters of the sub-sample without teaching experience were in their first or second year, there was a complete reversal in this ratio in the sub-sample with teaching experience. The majority of the latter were in the fourth and especially the third years. Those pursuing a Bachelor of Education degree after another degree remained about one-tenth of the sub-sample.

This sub-sample served a useful purpose in validating the Education Profession Attitude Questionnaire and served as a control group of teachers with experience against which the sub-sample having no teaching experience could be compared.

Overview of the Analysis

The completed questionnaires were scored and scores and personal data for each respondent recorded on IBM cards. The information recorded comprised twenty-one items of data taken from the General Information Questionnaire, the four OPI scores, the EPAQ score, and the five EPAS levels of aspiration.

Means and standard deviations of the sample population were calculated for each OPI score, the EPAQ score, and the five EPAS levels of aspiration. Respondents' scores were standardized to a mean of 50 and a standard deviation of 15 for each scale score (Table VIII).

A comparison was made between the OPI raw score means and

TABLE VIII

RAW SCORE AND STANDARDIZED MEANS AND STANDARD DEVIATIONS FOR FOUR OPI SCALES, EPAQ, AND FIVE EPAS ITEMS
(N = 1983)

	Omnibus Personality Inventory (OPI) Scale				Education Profession Aspiration Scale				
	Thinking Intro.	Social Intro.	Theoretical Orientation	Estheti- cism	EPAQ ^a	S-R ^b	S-I	L-R	L-I SC
Raw Mean									
Scores	34.3	20.9	16.6	11.9	68.6	39.3	45.3	44.2	50.4 43.3
Standardized									
Mean	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Raw Score									
Standard	9.3	8.3	5.6	4.8	6.4	8.5	11.4	9.8	12.1 10.7
Deviation									
Standardized									
Standard	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Deviation									

^aEPAQ: Education Profession Attitude Questionnaire.

^bS-R representing short-range realistic level of aspiration.
 S-I representing short-range idealistic level of aspiration.
 L-R representing long-range realistic level of aspiration.
 L-I representing long-range idealistic level of aspiration.
 SC representing level of aspiration based on one's self-concept.

standard deviations of this sample population and the means and standard deviations of the OPI normative sample (supra, p. 83). There was no significant difference in standard deviation on any of the four measures. Similarly, on three of the four OPI scales, namely, TI, SI, and Es, there were no significant differences in means. However, Education undergraduates at the University of Alberta, Edmonton, rated significantly lower ($t = .001$), scoring 16.6 compared to 18.8 for the normative sample of 2,390 college freshmen, on OPI Theoretical Orientation. Apparently, the three former scales do not discriminate between Education students and college students in general. Education undergraduates' scores on Thinking Introversion, Social Introversion, and Estheticism are typical of those scored by the total college population.

REFERENCES FOR CHAPTER IV

1. Alberta Teachers' Association. Alberta Teachers' Association Policy Handbook. Edmonton: Alberta Teachers' Association, 1964.
2. Center for the Study of Higher Education. Omnibus Personality Inventory--Research Manual. Berkeley, California: University of California, 1962.
3. Report of the Royal Commission on Education in Alberta. Edmonton: Queen's Printer, 1959.

CHAPTER V

DEVELOPMENT OF THE EDUCATION PROFESSION ASPIRATION SCALE

One of the attitude "dimensions" being researched in the present study is the level of aspiration within the Education profession. The development of an instrument required for assessing this level of aspiration depends upon the prior construction of a prestige scale or prestige hierarchy of Education positions. In this chapter the methodology for developing the Education Profession Aspiration Scale is described.

The review of literature on prestige ranking of Education positions affirmed the feasibility of constructing a prestige hierarchy of sixty Education positions. This was done in two ways, first by means of a method developed by the National Opinion Research Center (4), and secondly, by means of a statistical procedure designed by Thurstone and refined by Torgerson (5, Chapter X). The latter procedure, termed the Law of Categorical Judgment, enables the construction of a ratio scale of positions differing along a hierarchy not only in rank order but as well by deviation from a normal distribution mean value.

The Law of Categorical Judgment, a special case of Thurstone's Judgment Scaling Model was developed for analyzing data where the stimuli have been placed into categories ordered with respect to the attribute being investigated. It assumes that the proportion of times each stimulus is sorted below each category boundary is known. Torgerson states that estimates of these proportions may be obtained by using any

of three methods. These are:

1. Sorting Procedures. The subject is required to sort the stimuli into a number of piles, the first of which contains those stimuli that are most positive with respect to the attribute; the second, the stimuli next most positive; etc.

2. Rating Procedures. Stimuli are presented to the subject one at a time. The subject's task is to rate each stimulus (in the present case, each Education position) with respect to the attribute (prestige). The rating may be expressed on a numerical scale (e.g., rate on a scale from 1 to 5, 1 being most positive), on an adjective scale (e.g., "very high," "high," "average," "somewhat below average," and "low"), or on a graphic scale.

3. Rank-Order Procedures. The subject's task is to place the stimuli in rank order with respect to the attribute.

The method chosen for the present study was the second of the above procedures, that is, the rating procedure. Subjects were presented a list of sixty Education positions in a questionnaire soliciting their rating each of these on a scale from 1 to 5 (1 being most positive) with respect to prestige or admiration compared with Education positions in general. Adjectives were linked to each number so as to assist raters in understanding that 1 meant very high in prestige. The procedure is similar to the technique used by the National Opinion Research Center in constructing its hierarchy of ninety occupational titles.¹

¹The exact question-wording in the NORC survey was: "For each job mentioned, please pick out the statement that best gives your own personal opinion of the general standing that such a job has.

1 Excellent standing
2 Good standing
3 Average standing

4 Somewhat below average standing
5 Poor standing
x "Don't know where to place that one."

A sample of 149 Education seniors and 42 Education graduate students provided the sample necessary for construction of the scale. From their ratings EPPS was developed as outlined below.

I. THE EDUCATION PROFESSION PRESTIGE SCALE

The NORC Method

Ranking the sixty Education positions was done in two ways. First, a procedure similar to the one devised by the National Opinion Research Center (NORC) (4) was employed. Each element in the Raw Frequency Matrix (Table IX) was divided by N (in this study N was 191) to convert it to a proportion. The proportions in category 1 ("very high") were then multiplied by 100; those in category 2 ("high") were multiplied by 80; those in category 3 ("average") by 60; those in category 4 ("somewhat below average") by 40; and those in category 5 ("low") by 20. Row sums for these new elements were next calculated yielding a Rank Score (Column 7 in Table XI Appendix B). Theoretically, these rank scores could vary from a low of 20 to a high of 100 for any position. Actually, none of the scores fell at either of the extreme values; the range was 47.0 to 96.9.

Ranks were then determined from the rank scores on the basis of those with highest row sums being awarded highest rank. Whenever tied rank scores occurred, average ranks were calculated for the positions concerned. A "NORC ranking" of all sixty Education positions appears in column 8 of Table XI Appendix B.

RAW FREQUENCY MATRIX OF EDUCATION POSITIONS RATINGS
(RATED ON PRESTIGE OR ADMIRATION)

j	Position (N = 191)	Category (g)				
		Very High	High	Average	Somewhat Below Average	Low
1	Principal, city elementary school	3	93	82	13	0
2	Librarian, senior high school	0	12	81	80	18
3	Department head, University faculty of education	93	85	10	0	3
4	Principal, small town elementary school	3	56	97	33	2
5	Junior college personnel director	14	76	86	12	3
6	Teacher of separate/combined grades, small town elementary school	3	9	72	75	32
7	Research worker for a provincial or national teachers' organization	13	80	84	9	5
8	Director of audio-visual materials, city school system	6	62	88	28	7
9	Director of a division within the department of education	58	105	23	5	0
10	Executive secretary of a provincial or national teachers' organization	56	78	45	9	3
11	Teacher of vocational subject, small town high school	0	9	106	67	9
12	Cooperating teacher in elementary demonstration school	2	37	116	33	3
13	Senior high school curriculum consultant, city school system	16	116	54	5	0
14	Deputy minister of education	147	29	8	6	1
15	Teacher of academic subject, city high school	4	40	134	13	0
16	Research worker in pre-school child growth and development	11	83	83	12	2
17	Assistant dean of a university faculty of education	106	73	10	2	0
18	Principal, city high school	41	126	22	2	0
19	Elementary school curriculum consultant, city school system	13	96	73	8	1
20	Chief superintendent of schools for a province	142	43	4	2	0
21	Elementary school psychologist or counselor	6	79	95	11	0
22	Junior college business manager	4	39	108	35	5
23	Assistant principal, small town high school	2	40	126	22	1
24	Teacher of vocational subject, city high school	0	14	143	31	3
25	Personnel director, city school system	7	86	83	13	2
26	Registrar of a junior college	7	57	96	30	1
27	Assistant superintendent of a city school system	29	115	44	2	1
28	Teacher of physically handicapped or mentally retarded elementary pupils	7	50	105	28	1
29	Principal, small town high school	16	80	91	4	0
30	Assistant principal, small town elementary school	0	31	113	45	2
31	Guidance director in a senior high school	6	68	97	20	0
32	Supervisor of nursery schools and kindergartens	1	51	96	37	6
33	Superintendent of a school division or county	42	120	26	3	0
34	Superintendent of a city school system	70	105	16	0	0
35	President of a junior college, or dean	121	61	6	2	1
36	Director of a private nursery school or kindergarten	2	42	93	44	10
37	Supervisor of a high school subject field	4	90	88	9	0
38	Dean of the faculty of education at a university	153	29	5	2	2
39	Director of public relations, city school system	16	81	84	10	0
40	Elementary teacher of special subject (art, music, P.E., etc.)	0	20	128	39	4
41	Business manager of a city school system	3	28	80	66	14
42	President of a university	173	9	7	1	1
43	Kindergarten or nursery school teacher	2	8	82	73	27
44	Assistant principal, city high school	4	84	96	6	1
45	Department head of a subject field in a high school	2	76	105	8	0
46	Lecturer in a subject field in a faculty of education	9	83	85	14	0
47	Professor in a subject field in a faculty of education	30	123	36	2	0
48	Assistant principal in a city elementary school	1	58	117	14	1
49	Provincial inspector of high schools	64	98	26	3	0
50	General or special subject supervisor, elementary schools	10	82	90	9	0
51	Athletic coach, senior high school	1	20	111	51	8
52	Staff officer or field worker for a provincial or national teachers' organization	4	31	121	27	8
53	Director of a branch within the department of education	28	114	46	2	1
54	Librarian, elementary school	1	11	70	91	18
55	Cooperating teacher in a senior high demonstration school	4	43	126	16	2
56	Teacher of subject field in a junior college	6	66	115	4	0
57	Teacher of academic subjects, small town high school	3	23	145	20	0
58	Research director, city school system	17	99	69	6	0
59	School psychologist, city school system	16	98	63	13	1
60	Teacher of separate or combined grades, city elementary school	1	13	132	39	6

The Torgerson-Thurstone Method

The basic notion underlying the Law of Categorical Judgment is that a psychological continuum of the attribute under scrutiny is postulated. When a stimulus is presented to a subject, it brings about a discriminial process (whereby the subject identifies, or reacts to the stimulus) which has value on the continuum. Because of momentary fluctuations within the individual, and owing to various differences between individuals, a given stimulus does not always excite the same discriminial process, but may excite one with a higher or lower value on the psychological continuum. A large number of responses will produce a frequency distribution on the psychological continuum of discriminial processes associated with the stimulus. The Judgment Scaling model postulates that the values associated with any given stimulus form a normal distribution on the psychological continuum. Different stimuli may have different means or scale values, and different standard deviations. In order to locate these means and calculate their respective standard deviations, it is necessary, as with the NORC method, to begin with a frequency matrix which sorts the number of times each stimulus was rated in each category. It is then necessary to convert the elements in this matrix to unit normal deviates (i.e., treat them as areas, and convert these "areas" to units of standard deviation on a normal distribution curve of area one).

Following a mathematical procedure outlined by Torgerson, the parameters of the stimuli can be estimated, given the observed proportion of times each stimulus is judged below each category boundary. The

procedure necessitated the construction of a sixty row by five column Raw Frequency Matrix (Table IX), a sixty by five Cumulative Frequency Matrix (Table XLI, Appendix B), a sixty by four Cumulative Proportion Matrix (Table XLII, Appendix B), and a Transformation Matrix (Table XLIII, Appendix B), in which the elements of Table XLII were transformed into unit normal deviates.

Where fallible data are used (as in this case), a number of cells in the Transformation Matrix will be blank (Table XLIII, Appendix B). Algebraic procedures have been developed by Torgerson for treating such cases. These were employed in analyzing present data.

The mean for each category boundary was first determined by beginning with a matrix of differences between corresponding cells of the Transformation Matrix. Column sums and means were calculated, and by setting the origin of the first category boundary at zero, the other category boundaries were then determined using the equation

$$t_{g+1} - t_g = \frac{1}{q} \sum_{j=1}^n (x_{j,g+1} - x_{jg})$$

where t_g = the category boundary for the g th category

q = the number of non-vacant cells in a column

n = the number of rows in the matrix (i.e., number of stimuli)

x_{jg} = the cell in the g th row and the j th column of the Transformation Matrix.

The scale values were obtained by constructing a new sixty by four matrix of elements $t_g - x_{jg}$. This matrix numerically translates the elements in each column to the common origin ($t_1 = 0$). Each non-vacant

cell in a row of the new matrix is an estimate of the scale value for that stimulus (row). The average of these estimates provides the scale value desired. The equation below illustrates the method for calculating each scale value:

$$s_j = \frac{1}{q} \sum_{g=1}^m (t_g - x_{jg})$$

where s_j = scale value for the j th stimulus

q = number of non-vacant cells in a row

m = number of columns in the matrix

t_g = category boundary for the g th category

x_{jg} = element in the j th row and the g th column of the Transformation Matrix.

Scale values, calculated by means of the above equation, for the sixty positions in EPPS are shown in Table XLIV, Appendix B. The two groups, Education seniors, and graduate Education students, were also treated separately and rank order correlations calculated on the resulting two scales in order to determine the extent of agreement or disagreement between ratings of Education students, most of whom had no teaching experience, and a group the majority of which had teaching experience and consequently had been in more intimate contact with a large number of individuals holding the various positions listed in the questionnaire. Kennedy, Black, and Clarke's finding respecting inter-group agreement (supra, p. 74) was supported. As shown at the bottom of Table X, a Spearman's rho between the two sets of rankings was .965. In accord with Counts' conclusions (supra, p. 69), the greatest discrepancy between the ratings involved a number of the less common positions. Of

TABLE X

RANKING OF EDUCATION POSITIONS BY EDUCATION SENIORS
AND BY EDUCATION GRADUATE STUDENTS

Position ^a (j)	Ranked by Education Seniors ^b	Ranked by Graduate Students ^b	Position ^a (j)	Ranked by Education Seniors ^b	Ranked by Graduate Students ^b
42	1	1	7	31	20.5
20	2	3.5	45	32	33
38	3	2	21	33.5	25
14	4	3.5	56	33.5	30.5
35	5	5.5	31	35	34.5
17	6	9	28	36	52.5
3	7	7	48	37	38.5
34	8	5.5	8	38	45
49	9	10.5	26	39	38.5
9	10	10.5	15	40.5	40
18	11	12.5	55	40.5	41
33	12	15	4	42	42
47	13	12.5	23	43	43.5
27	14	16	57	44	43.5
53	15	14	22	45	49.5
10	16	8	12	46	46
13	17	19	32	47	37
58	18	17.5	30	48	48
19	19	20.5	52	49.5	36
29	20	23.5	36	49.5	47
39	21	22	24	51	51
59	22	17.5	40	52	49.5
50	23	27.5	60	53	54
5	24	35.5	51	54	55.5
37	25	30.5	41	55	52.5
46	26.5	29	11	56	57
44	26.5	32	43	57	59
16	28	23.5	2	58	55.5
25	29.5	27.5	54	59.5	58
1	29.5	26	6	59.5	60

Spearman's rho between ranks .965 Significance: Beyond .00001

^aPosition numbers represent the positions in Table IX.

^bRanks calculated in the same manner as for Table IX.

the sixty positions, the two groups differed by a rank of two or less on ordering thirty-five. Of the remaining twenty-five positions, a rank order difference of six or greater was calculated on only eight positions.

These eight (with differences in rank order recorded in brackets following) were the three positions involving employment by a provincial or national teachers' organization, and five positions not commonly found in Alberta, if at all. The former three are:

- 7 Research Worker for a Provincial or National Teachers' Organization (10.5)
- 10 Executive Secretary of a Provincial or National Teachers' Organization (8)
- 52 Staff Officer or Field Worker for a Provincial or National Teachers' Organization (13.5)

In all three of the above cases the graduate students rated these positions higher than did Education seniors. Possibly for Education seniors "acculturation" to the profession, or more specifically, to the professional organization, was not as complete as for the graduates--most of whom had taught--and consequently may have caused the former to rate these positions lower in prestige. The lesser likelihood of their being acquainted with holders of these positions may also have had some effect. Of the forty-three graduate students three held positions on Provincial Teachers' Organizations. This may have influenced their assigning the above three positions a somewhat higher rating than others had.

The other five positions involving great disparity in rating are:

- 5 Junior College Personnel Director (11.5), rated higher by Education seniors,

- 8 Director of Audio-Visual Materials in a city school system (7), rated higher by Education seniors,
- 21 Elementary School Psychologist or Counsellor (12.5), rated higher by graduate students (a large number of whom were taking graduate work in Educational Psychology),
- 28 Teacher of Physically Handicapped or Mentally Retarded Elementary pupils (16.5), rated higher by Education seniors,
- and 32 Supervisor of Nursery Schools and Kindergartens (10), rated higher by graduate students.

Two reasons proposed by Counts for disagreement with respect to placement appear appropriate to the present analysis. Counts suggested unfamiliarity with the occupation and uncertain status of the occupation cause respondents to disagree on its placement (supra, p. 69). The disparity in the rankings of the above five occupations can be explained in terms of both these reasons.

Since overall differences were not large as evidenced by the high rank order correlation between them, it was decided to treat the two sub-samples as one. The combined rankings are shown in Table XI. This combined hierarchy constitutes the basic ranking for constructing the Education Profession Prestige Scale. Scale values for this hierarchy were developed by the Thurstone-Torgerson technique. Since there was some discrepancy between the two scales--the one constructed on the basis of NORC's procedure, the other by means of the Thurstone-Torgerson procedure--it was decided, in view of the high correlation between the two scales (Spearman's $\rho = .987$), to calculate a scale value for each position based on a mean of the two rankings. Each position was thus given a Thurstone-Torgerson scale value corresponding to the mean ranking. These scores were subsequently standardized with a mean of fifty and a

Combined Rank ^a	Position Title	EPAS Number	EPAS Value ^b	Category Number ^c
1	President of a university	51	82	3
2	Chief superintendent of schools for the province	59	81	3
3	Dean of the faculty of education	50	77	3
4	Assistant dean of education	49	76	3
5	Deputy minister of a provincial department of education	60	75	3
6.5	Superintendent of a city school system	33	74	3
6.5	President or dean of a junior college	43	74	3
8.5	Department head in a faculty of education	48	70	3
8.5	Provincial inspector of high schools	56	70	2
10	Principal of a city secondary school	27	69	3
11.5	Director of a division within the provincial department	57	68	3
11.5	Superintendent of a school division or county	55	68	3
14.5	Assistant superintendent of a city school system	34	60	3
14.5	Professor in the faculty of education	47	60	1
14.5	Director of a branch within a departmental division	58	60	3
14.5	Executive secretary within a provincial or national teachers' organization	53	60	3
17	Curriculum consultant in a city secondary school	29	58	5
18	Research director in a city school system	36	57	5
19.5	School psychologist in a city school system	39	55	4
19.5	Principal in a small town secondary school	26	55	3
21.5	Curriculum consultant in an elementary school	17	54	5
21.5	Director of public relations in a city school system	38	54	6
25	Elementary grade subject supervisor	10	50	2
25	Research worker in preschool child growth and development	3	50	5
25	Lecturer in the faculty of education	46	50	1
25	Assistant principal of city secondary school	25	50	3
25	Junior college personnel director	42	50	6
30	Secondary school subject supervisor	28	49	2
30	Research workers in a provincial or national teachers' organization	54	49	5
30	Junior college teacher of a subject field	41	49	1
30	City school system personnel director	40	49	6
30	Psychologist or counselor in an elementary school	16	49	4
33	Principal of city elementary school	14	48	3
35	Secondary school department head of a subject area	23	46	1
35	Secondary school guidance director	31	46	4
35	Junior college registrar	44	46	6
37.5	Assistant principal of city elementary school	12	45	3
37.5	Elementary teacher of physically or mentally handicapped children	8	45	1
39	Cooperating teacher in a secondary demonstration school	9	46	1
40	Teacher of academic subject in a city secondary school	20	43	1
42	Director of audio-visual materials in a city system	37	42	6
42	Principal of a small town elementary school	13	42	3
42	Assistant principal in a small town secondary school	24	42	3
45	Junior college business manager	45	39	6
45	Teacher of academic subject in a small town secondary school	18	39	1
45	Cooperating teacher in an elementary demonstration school	9	39	1
47	Supervisor of nursery schools	2	38	2
48	Assistant principal in a small town elementary school	11	37	2
50	Staff officer or field worker for a provincial or national teachers' organization	52	36	6
50	Teacher of vocational subject in a city secondary school	21	36	1
50	Director of a private nursery or kindergarten	4	36	3
52	Elementary teacher of special subjects (art, music, P.E. etc)	7	35	1
54	Teacher of separate/combined grades in a city elementary school	6	32	1
54	Athletic coach in a city secondary school	30	32	6
54	City school system business manager (supplies, purchasing)	35	32	6
56	Teacher of vocational subject in a small town secondary school	19	27	1
57.5	Nursery school or kindergarten teacher	1	25	1
57.5	Elementary school librarian	15	25	6
59.5	Secondary school librarian	32	24	6
59.5	Teacher of separate/combined grades in small town elementary school	5	24	1

^aBased on the mean of the Thurstone-Torgerson scale values for the Thurstone-Torgerson and NORC rankings.

^bScale values standardized to a mean of 50 and standard deviation of 15.

^cCategory numbers represent the following: 1-Classroom teaching; 2-Supervision of classroom teachers; 3-Administration; 4-Counselling; 5-Research; 6-Services.

standard deviation of fifteen (Table XI).

Despite a number of tied ranks it is evident from the data presented above that Education positions differ in prestige status. It was possible not only to rank these positions, but to assign ratio scale values to each of the ranks facilitating comparison between ranks. Following is the application of EPPS in the construction of the Education Profession Aspiration Scale.

II. DESCRIPTION OF THE EDUCATION PROFESSION ASPIRATION SCALE

EPAS is an instrument modeled after the more general Occupational Aspiration Scale recently developed by Haller and Miller (2). EPAS purports to measure a person's level of aspiration within the Education profession (LEPA) as compared to that of his fellows.

The Haller and Miller instrument on the other hand has application at a much earlier stage in the process of occupational selection. It is based on seventy-eight of the ninety general occupational titles used in the NORC survey (supra, p. 71), consequently, it has a broader application.

The application of EPAS is more limited in that EPAS is designed for use with individuals who have already delimited themselves to an occupation within the Education profession or are anticipating doing so. Despite this limitation, EPAS has a number of compensating advantages.

Since Haller and Miller's Occupational Aspiration Scale (OAS) is a structured (not a free response) technique, the alternatives it presents may not be especially relevant to the respondent. OAS measures

level of aspiration by requiring the individual to select from a list of occupations which may have little similarity to the one he is anticipating entering. In EPAS there is much less likelihood of this occurring. Optional responses for each item span a range of positions comprising sixty alternatives within the Education profession. Since respondents are presented a large number of alternative choices within a single profession, there is a greater probability of the actual position aspired to being listed.

EPAS is a five-item multiple-choice instrument (Appendix A). It includes items permitting responses at both the realistic and idealistic expression levels of LEPA, each at two goal- or career-periods, short-range (end of schooling) and long-range (ten years after completing schooling). Thus it is possible to have two distinctive ranges of aspiration. One is the immediate future or short-range, extending from the expected to the preferred levels of aspiration; the other is the distant future or long-range, also extending from expected to preferred levels along a hierarchy. In this study, the hierarchy--as stated earlier--is constructed on the prestige dimension. The fifth question in the scale attempts to elicit from respondents a level of aspiration based on a global quantification of their self-concept.

The alternatives for each item consist of a list of sixty titles of Education positions listed for respondent convenience in eight classifications. These are: (1) Pre-School (nursery and kindergarten) positions, (2) Elementary School positions, (3) Secondary School positions, (4) School System administration and Special Services positions, (5) Junior College positions, (6) University positions, (7) Professional

Organization positions, and (8) Provincial Department of Education positions. Responses to each item are converted to EPPS scores. A diagonal matrix of intercorrelations between pairs of EPAS items so converted for the sample population ($N = 1,820$) appears in Table XII.

TABLE XII

PEARSON PRODUCT-MOMENT INTERCORRELATION MATRIX OF FIVE EDUCATION
PROFESSION ASPIRATION SCALE ITEMS
($N = 1,820$)

Item	1 Short-Range Realistic	2 Short-Range Idealistic	3 Long-Range Realistic	4 Long-Range Idealistic	5 Self- Concept
Short-Range Realistic	1.00	.48	.50	.40	.45
Short-Range Idealistic		1.00	.43	.57	.54
Long-Range Realistic			1.00	.55	.50
Long-Range Idealistic				1.00	.51
Self- Concept					1.00

To test the stability of EPAS, the instrument was again administered to a sub-sample of seventy-two freshmen six months after the original test. Correlations between the five pairs of test--re-test items are given in Table XIII; the correlations range from .46 to .67. Considering the length of the time interval between test and re-test, the items show a fairly high degree of stability.

This instrument, in addition to measuring the level of aspiration along a hierarchy of prestige status, also classifies individuals into one of six gross categories of positions aspired to within the profession.

TABLE XIII

TEST--RE-TEST RELIABILITY COEFFICIENTS ON EPAS ITEMS CALCULATED ON
FRESHMAN SUB-SAMPLE SCORES AFTER SIX-MONTH TIME INTERVAL
(N = 72)

	Item				
	1 Short-Range Realistic	2 Short-Range Idealistic	3 Long-Range Realistic	4 Long-Range Idealistic	5 Self- Concept
Test--Re-Test Correlation	.46	.56	.67	.67	.46

The first two categories consist of instructional positions, namely, (1) Classroom Teaching, and (2) Supervision of Classroom Teachers. Categories three to six inclusive consist of non-instructional positions classified as (3) Administration, (4) Counselling, (5) Research, and (6) Services. The positions falling into each category are also shown in Table XI above (p. 108).

REFERENCES FOR CHAPTER V

1. Counts, George S. "The Social Status of Occupations: A Problem in Vocational Guidance," School Review, XXXIII (January, 1925), 16-27.
2. Haller, Archibald O., and Irwin W. Miller. The Occupational Aspiration Scale: Theory, Structure and Correlates. Technical Bulletin Number 288. East Lansing, Michigan: Michigan State University, 1963.
3. Kennedy, Kathleeen, D. B. Black, and S. C. T. Clarke. "Positions in Education," The ATA Magazine, XLII (October, 1961), 31-33.
4. National Opinion Research Center. "Jobs and Occupations: A Popular Evaluation," Class, Status, and Power, Reinhard Bendix and Seymour Martin Lipset, editors. Glencoe, Ill.: The Free Press, 1953, pp. 411-426.
5. Torgerson, Warren S. Theory and Methods of Scaling. New York: John Wiley and Sons, Inc., 1958.

CHAPTER VI

ANALYSIS AND RESULTS: DIFFERENCES BETWEEN SUB-GROUPS OF EDUCATION STUDENTS

The major purpose of the study was to investigate differences in attitudes between selected groups of students pursuing a teacher preparation program and secondly, to compare seniors in alternate programs of teacher education on these attitudes. In Chapter II hypotheses were developed from a theoretical analysis of the problem and sub-problems. Hypotheses 1, 2, 3, and 4 are concerned principally with the effort to identify attitude differences between Education students classified according to various groups that may be reference groups for them. In the present chapter the four hypotheses are stated, the method of testing them described, and the results of the tests presented.

For the purpose of hypothesis testing, measures on ten variables were obtained. Five of these were items from the Education Profession Aspiration Scale. Since the five correlate quite highly with each other (supra, p. 97), only one item, item 5--which attempts to assess a level of aspiration based on the respondent's self-concept--was used in the following analyses.

Differences between groups on the above-mentioned variables were sought by the one-way analysis of variance technique. The critical level of significance for the F ratio was set a priori at .05. Where comparisons of individual means following a significant F ratio were thought necessary, a t test was applied. The basis for rejecting the

null hypothesis in the latter case was a probability of $1/10 \frac{k}{k-1}$ where k is the number of groups. This is the level of significance recommended by Fisher (1, pp. 59-60) for applying a t test following an F test.

I. ATTITUDE DIFFERENCES BETWEEN SOCIAL CATEGORIES OF EDUCATION

STUDENTS

Hypothesis 1 states that there are attitude differences between Education students classified by social category. Four social categories, namely, sex, marital status, age, and subjective socio-economic status were selected for testing this hypothesis. The results of the analyses of evidence gathered in the present study are presented separately for each social category under sub-hypotheses 1.1 to 1.4 below.

Hypothesis 1.1: Education students classified on the basis of sex differ significantly in attitudes.

Findings. In Table XIV are reported the scores of male and female teaching candidates on the six Education Student Attitude Inventory (ESAI) scales. Significant F ratios were obtained on four variables. On three of these the level of significance was beyond .001. Male Education students scored significantly higher than female Education students on Theoretical Orientation (TO), that is, on preference for using the scientific method in thinking and interest in scientific activities. Men also scored significantly higher than women on level of occupational aspiration (LEPA) and on the Education Profession Attitude Questionnaire (EPAQ) indicating greater agreement with the

TABLE XIV

BASIC DATA FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN TEACHING CANDIDATES^a CLASSIFIED BY SEX OF RESPONDENT

OPI Attitude Scales ^b														
		TI		SI		TO		Es		EPAQ		LEPA ₂		
	N	Mean	S ²	Mean	S ²	Mean	S ²	Mean	S ²	Mean	S ²	N	Mean	S ²
Male	622	49.3	223	50.0	224	54.8	199	44.1	213	49.9	221	583	55.9	220
Fe-														
male	941	48.0	219	49.5	213	44.6	192	53.9	187	48.4	183	888	44.9	160
Total	1563	48.5	221	49.6	221	48.6	195	50.0	197	49.0	198	1471	49.2	184
t		1.92		0.56		14.1		13.4		2.09			15.5	
Signi-														
ficance		NS		NS		.001		.001		.05			.001	

^aDegree holders and vocational route not included.

^bOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration.

expressed policy statements of the professional organization.

Women scored significantly higher than men on Estheticism (Es) only, that is, they indicated a higher degree of interest than did men in painting, sculpture, music, literature and dramatics, and artistic matters generally.

Discussion. The differences noted on Theoretical Orientation and Estheticism might be interpreted as a reflection of broad culturally based sex differences that one would expect to find in any occupational group. The Theoretical Orientation scores tend to support the commonly held stereotype of science teaching being a man's rather than a woman's calling.

Because of the differing proportions of men and women in the elementary and secondary curriculum majors, there was a possibility that these and the other two differences (EPAQ and LEPA) might be related to curriculum major; therefore, the analysis was repeated for elementary and secondary teaching candidates taken separately. Tables XV and XVI present the results of these analyses.

Results from further analyses. The tests of significance indicated that the above-mentioned differences in Theoretical Orientation, Estheticism and level of aspiration scores held true when the sample was treated by curriculum major. That is, males scored higher on TO and LEPA; females scored higher on Es. For elementary curriculum majors there was also a significant sex difference on Thinking Introversion (TI) and on Education Profession Attitude Questionnaire (EPAQ) means. In both cases means for males were higher, beyond the .05 level of confidence.

Discussion of results of further analyses. As expected (supra, p. 36), men in both curriculum majors scored higher than women on level of occupational aspiration (LEPA). Inasmuch as most supervisory and administrative posts are presently held by men, it is not surprising that males more often than females aspire to these positions which rate high on the Education Profession Prestige Scale (EPPS).

Of interest are the higher mean scores of elementary males compared with elementary females on TI and EPAQ. Elementary males indicated a greater preference for reflective thought and interest in a wide variety of areas (TI). Since no such sex difference was evident

TABLE XV

ESAI MEANS FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN ELEMENTARY
TEACHING CANDIDATES CLASSIFIED BY SEX OF RESPONDENT

	N	OPI Attitude Scales ^a					LEPA	
		TI Mean	SI Mean	TO Mean	Es Mean	EPAQ Mean	N	Mean
Male	73	49.0	49.8	52.7	48.0	51.6	68	47.5
Female	446	45.1	50.0	41.3	53.0	47.2	418	39.1
Total	519	45.6	50.0	42.9	52.3	47.8	486	40.3
t		2.15	0.09	6.52	2.90	2.62		5.04
Significance		.03	NS	.001	.005	.01		.001

^aOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration.

TABLE XVI

ESAI MEANS FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN SECONDARY
TEACHING CANDIDATES CLASSIFIED BY SEX OF RESPONDENT

	N	OPI Attitude Scales ^a					LEPA	
		TI Mean	SI Mean	TO Mean	Es Mean	EPAQ Mean	N	Mean
Male	544	49.5	49.9	55.1	43.7	49.6	510	57.1
Female	492	50.5	49.0	47.5	54.7	49.5	467	49.8
Total	1036	50.0	49.5	51.4	48.9	49.5	977	53.6
t		1.09	1.00	8.91	12.5	0.06		8.86
Significance		NS	NS	.001	.001	NS		.001

^aAs in Table XV, above.

at the secondary level, and since mean scores of elementary and secondary males and of secondary females were of the same order (range: 49.0 to 50.5; t 's not significant), this difference is probably not a result of general male-female differences; it may instead be a consequence of the type of female student who enters the elementary curriculum major.

Tests of significance also indicated that the sex difference in EPAQ means for the entire sample stemmed from the sex difference at the elementary curriculum level only. No sex difference on EPAQ was found at the secondary level. This too appears to indicate that the elementary females were a somewhat select group differing from both elementary and secondary males and from secondary females on the attitudes measured by EPAQ (t significant beyond .01 level). In terms of reference group theory, the professional organization did not serve as a reference group for female elementary majors to the same extent that it did for the other three categories. Since female elementary majors typically leave university before completing degree requirements (supra, p. 92), a time factor may be responsible for these differences. That is, female elementary majors may not have become identified to the same extent, due to the shorter preparation period, with the goals and policy of the professional organization.

From the standpoint of the professional organization, this attitude difference of the female elementary majors may be an undesirable circumstance. If female elementary majors see themselves as a group different from male elementary and from male and female secondary majors in respect of professional policy, this difference may have

implications for professional solidarity.

On the other hand, the nature of the task performed by elementary teachers, especially by primary teachers--nearly all of whom are presently female--may be such as to attract, and perhaps require, teachers with interests and attitudes different from those of other teachers. From the educational standpoint this attitude difference may be desirable.

Hypothesis 1.2: Education students classified on the basis of marital status differ significantly in attitudes.

Findings. Table XVII compares the ESAI scores of single and married teaching candidates. Married students scored significantly higher on preference for using the scientific method in thinking and interest in scientific activities (TO), and on level of occupational aspiration (LEPA). Married students, in addition, demonstrated a preference for reflective thought and interest in a wide variety of areas rather than a preference for overt action and for evaluating ideas on the basis of their practical, immediate application (TI). There were no significant differences on the other three scales (SI, Es, and EPAQ).

Discussion. The scores of married students like those of male students yielded significantly higher means on preference for using the scientific method in thinking and interest in scientific activities (TO), and on level of occupational aspiration (LEPA). This group also had a higher mean on Thinking Introversion (TI). Since single students

TABLE XVII

BASIC DATA FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN TEACHING CANDIDATES^a CLASSIFIED BY MARITAL STATUS

	N	OPI Attitude Scales ^b					LEPA	
		TI Mean	SI Mean	TO Mean	Es Mean	EPAQ Mean	N	Mean
Single	1376	47.6	49.5	47.8	50.2	48.8	1302	48.7
Married	180	55.3	50.3	55.2	48.1	50.3	163	53.6
Total	1556 ^c	48.5	49.6	48.6	50.0	49.0	1465	49.2
t		6.66	0.70	6.45	1.79	1.37		4.06
Significance		.001	NS	.001	NS	NS		.001

^aDegree holders and vocational route omitted.

^bOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration.

^cNot used: data for seven respondents classified as separated, divorced or widowed.

were predominantly female (867 female, 509 male), and married students predominantly male (112 male, 68 female), and since the differences between single and married students on Estheticism and on attitude toward professional policy, although not significant statistically, were in the same direction as might be expected for a group classified by sex, these findings may be merely a reflection of the male-female attitude differences reported under Hypothesis 1.1. This possibility casts doubt on the utility of a classification of prospective teachers based solely on the variable marital status. The findings with respect to marital status are therefore inconclusive.

Hypothesis 1.3: Education students classified on the basis of age differ significantly in attitudes.

Findings. The results of tests of differences between four age groups of teaching candidates are presented in Table XVIII. Five of the

TABLE XVIII

BASIC DATA FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN EDUCATION STUDENTS CLASSIFIED BY AGE OF RESPONDENT

Age	N	OPI Attitude Scales ^b				EPAQ Mean	LEPA	
		TI Mean	SI Mean	TO Mean	Es Mean		N	Mean
Under 18	96	46.1	53.9	47.8	49.8	46.0	91	47.5
18 - 19	723	46.0	49.9	46.2	49.9	47.5	693	46.8
20 - 21	397	48.7	48.4	48.3	50.8	51.3	369	50.9
22 and over	79	53.7	46.8	54.2	47.8	50.6	76	52.1
Total	1295 ^a	47.3	49.6	47.4	50.0	48.7	1229	48.4
F ratio		8.52	4.57	8.33	1.01	8.27		8.49
Significance		.001	.004	.001	NS	.001		.001

^aNot used: Education students with teaching experience (203), those with 2 or more years between high school and university (380), graduates from other faculties with fewer than 2 years between high school and university (104), and one individual who did not indicate his age.

^bOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration.

F tests computed on the data for these students were significant beyond the .005 level. In four cases the means of the oldest age group were highest. The mean of the youngest age group was highest on the fifth

discriminating variable.

Older students were characterized by a greater liking for reflective thought, and manifested interests in a greater variety of areas than did younger students (TI). They expressed a greater interest in scientific activities and a greater preference for using the scientific approach to problem solving (TO). Older students revealed a greater degree of concurrence with the stated policy of the professional organization (EPAQ); they indicated a higher level of occupational aspiration (LEPA); and they indicated a greater tendency to seek and to gain satisfaction from social contacts (low SI scores).

Discussion. As stated above, five of the six analyses of variance revealed significant differences between prospective teachers comprising different age groups. In addition, all five sets of scores showed a progression in means from one age group to the next. There appears to be little doubt about the existence of significant differences between prospective teachers comprising different age groups.

As anticipated, older students revealed a greater degree of concurrence with the stated policy of the professional organization (EPAQ), and they indicated a higher level of occupational aspiration (LEPA). Age typically correlates positively with length of time spent in preparation program; it appears reasonable to assume that, if reference group processes are at work, attitudes respecting professional policy will be influenced in time in the direction of agreement with this policy.

Since elementary major teaching candidates typically spend a

shorter period in pre-service preparation than do secondary candidates consequently their mean age is lower, and since elementary positions rate lower on EPPS than do secondary positions, it appears plausible to assume that the aspiration levels of younger candidates would be lower than the aspiration levels of older candidates. It is also probable that those with higher levels of aspiration remain at university longer.

Age differences on the other three variables, namely, Thinking Introversion, Theoretical Orientation, and Social Introversion are more difficult to explain. Inasmuch as the present study used a cross-sectional approach, there is some danger in making comparisons between age groups. It is difficult to say at this point in the study whether the differences noted are merely a result of maturity or are a product of the professional preparation program. They may also, as suggested in the literature (Chapter III), be a consequence of selection among students who elect to remain in or leave the teacher preparation program.

Hypothesis 1.4: Education students classified on the basis of subjective socio-economic status differ significantly in attitudes.

Findings. Table XIX compares the ESAI means of teaching candidates classified according to subjective socio-economic status. Four of the six F ratios were significant beyond the .05 level. The F ratio computed on SI means was significant beyond the .001 level.

In three of the four cases of significant differences, students who stated that the socio-economic level of their family was higher than the socio-economic levels of most university students' families in

TABLE XIX

BASIC DATA FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN TEACHING
CANDIDATES CLASSIFIED BY SUBJECTIVE SOCIO-ECONOMIC STATUS

Subjective Socio-Economic Status	N	OPI Attitude Scales ^a				EPAQ Mean	LEPA	
		TI Mean	SI Mean	TO Mean	Es Mean		N	Mean
Lower than most uni- versity students	368	48.8	51.9	49.9	50.4	48.8	341	50.4
About the same	1041	48.0	49.2	48.0	49.4	48.8	981	48.5
Higher than most university students	145	51.3	46.5	50.0	53.5	50.8	143	51.2
Total	1554	48.5	49.6	48.6	50.0	49.0	1465	49.2
F ratio		3.22	8.12	2.87	5.19	1.36		3.63
Significance		.05	.001	NS	.01	NS		.05

^aOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration.

general scored higher than did the two groups who thought their families average or below average in this regard. High subjective socio-economic status students typically expressed greater interest in a wide variety of areas such as literature, art, and philosophy, and had a greater liking for reflective thought (TI). More often than the average or low subjective socio-economic status student they endorsed statements indicating diverse interests in artistic matters and activities (Es). High socio-economic status students also indicated a higher level of occupational aspiration (LEPA) than did the other two

groups.

The mean of high socio-economic status students on Social Introversion was lower than means for the other two groups indicating that high socio-economic status students expressed a greater interest in being with people, and in seeking and gaining satisfaction from social contacts. It is interesting to note that generally differences between high and average subjective socio-economic level students were greater than differences between high and low socio-economic level students. This is true for three of the four scales that discriminate between the three groups. Only in the case of SI is there a distinct progression in means as one moves from low to high socio-economic level.

Discussion. The theoretical framework for this study indicated that different socio-economic strata develop unique value orientations, attitudes, language habits, manners, and other appropriate cultural attributes. It would seem reasonable then to take into account their socio-economic backgrounds when making comparisons between groups of teachers or prospective teachers. The significant F ratios on four variables and the high and low mean scores of the high socio-economic group on these four appear to bear this out. However, the findings are also perplexing. On three of the four discriminating variables there is no distinct progression in mean scores as the low, average and high socio-economic level students are considered. All four variables appear to discriminate between the high socio-economic status group and others but three of these have no power to discriminate between the average and low groups.

We might speculate as to why the three scales, Thinking

Introversion, Estheticism and the Education Profession Aspiration Scale, had no power to discriminate between average and low socio-economic students. It may be that subjective socio-economic status is not a valid classification, especially for these two groups. On the other hand, it is possible that exposure to a university environment tends to level out attitude differences between the low and average socio-economic level groups.

Because of the inability of TI, Es and LEPA to discriminate between the average and low socio-economic status groups, and because the high socio-economic group forms less than one-tenth of the present sub-sample this casts doubt on the usefulness of the variable subjective socio-economic status in performing the subsequent analyses in this research.

Summary and Conclusion

Table XX summarizes the findings related to Hypotheses 1.1 to 1.4. Hypothesis 1.1 was supported for four of the six attitude variables. That is, male and female prospective teachers differed significantly on Theoretical Orientation (TO), Estheticism (Es), attitude toward professional organization policy (EPAQ), and level of aspiration (LEPA). On three of these, namely, TO, Es and LEPA, the sex difference held for both elementary and secondary curriculum majors. On two others, namely, Thinking Introversion (TO), and EPAQ, it held for elementary candidates only. There was no sex difference on Social Introversion at either curriculum level.

Hypothesis 1.2 was tentatively rejected as inconclusive.

TABLE XX

SIGNIFICANCE OF F RATIOS RELATED TO HYPOTHESES BASED ON SOCIAL CATEGORIES OF TEACHING CANDIDATES

Hypothesis	Attitude Scale						Number of Significant <u>F</u> ratios and Decision
	TI	SI	TO	Es	EPAQ	LEPA	
1.1 (Sex class.)	NS	NS	.001	.001	.05	.001	4 Substantially accepted
1.2 (Marital St.)	.001	NS	.001	NS	NS	.001	3 Tentatively rejected as inconclusive
1.3 (Age class.)	.001	.004	.001	NS	.001	.001	5 Substantially accepted
1.4 (Subj.SES)	.05	.001	NS	.01	NS	.05	4 Accepted in part

Although three of the six variables discriminated between single and married teaching candidates, the fact that the single candidates were largely female and the married candidates predominantly male suggested that any conclusions regarding attitude differences between single and married candidates would be highly tenuous.

Hypothesis 1.3 was substantially supported. Five of the six variables showed significant differences beyond the .005 level of confidence. In addition, all five sets of scores showed a progression in means from one age group to the next. Only Estheticism (Es) did not discriminate between age groups.

Hypothesis 1.4 was partially supported in that four variables, namely, TI, SI, Es and LEPA, showed significant F ratios. However, from another viewpoint the results were inconclusive in that mean scores of low socio-economic students on three of these (TI, Es, LEPA), were more like those of high socio-economic students than were the scores of the

average group.

Hypothesis 1 that there are attitude differences between Education students classified by social category was at least partly supported by the evidence presented above. That is, on the four sub-hypotheses under investigation in this part of the study, two were substantially supported, one was partially supported, and the remaining one tentatively rejected as inconclusive.

II. ATTITUDE DIFFERENCES BETWEEN MEMBERSHIP GROUPS OF EDUCATION STUDENTS

Hypothesis 2 states that Education students classified by membership group differ in attitudes. Three classifications of membership groups, namely, curricular major, subject matter field of concentration, and a prospective teacher--experienced teacher classification were tested in this study. Each classification was submitted to the test of empirical evidence under sub-hypotheses 2.1 to 2.3 below.

Hypothesis 2.1: Education students classified by curriculum major differ significantly in attitudes.

Findings. The results of the tests of differences between curriculum majors for each of the six variables are presented for teaching candidates in Table XXI and for experienced teachers in Table XXII.

For the teaching candidates, three of the four OPI scale means showed differences which are significant beyond the .001 level (Table XXI). Only OPI Social Introversion did not discriminate between curricular groupings of prospective teachers. Secondary curriculum majors expressed greater liking for reflective thought and greater interest in

TABLE XXI

BASIC DATA FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN TEACHING CANDIDATES^a CLASSIFIED BY CURRICULUM MAJOR

Curriculum Major	N	OPI Attitude Scales ^b					LEPA	
		TI Mean	SI Mean	TO Mean	Es Mean	EPAQ Mean	N	Mean
Elementary Route	519	45.7	50.0	42.9	52.3	47.8	486	40.3
Secondary Route	1036	50.0	49.5	51.5	48.9	49.5	977	53.6
Vocational Route	58	55.0	51.5	57.3	46.1	51.3	50	48.9
Total	1613	48.0	49.7	48.9	49.9	49.0	1513	49.2
F ratio		20.6	0.65	72.1	11.0	3.40		167.5
Significance		.001	NS	.001	.001	.05		.001

^aExcludes graduates from other faculties now pursuing teacher preparation (159) and eight respondents who did not indicate curriculum major.

^bOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration.

TABLE XXII

BASIC DATA FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN EXPERIENCED TEACHERS^a CLASSIFIED BY CURRICULUM MAJOR

Curriculum Major	N	OPI Attitude Scale ^b					LEPA	
		TI Mean	SI Mean	TO Mean	Es Mean	Mean	N	Mean
Elementary Route	61	53.5	51.4	48.6	54.9	58.3	56	50.6
Secondary Route	133	54.8	50.2	55.1	51.7	58.8	120	53.4
Total	194	54.4	50.6	53.0	52.8	58.6	176	47.5
<u>t</u>		0.53	0.56	2.79	1.34	0.21		1.12
Significance		NS	NS	.01	NS	NS		NS

^aExcludes one respondent who did not indicate route and eight respondents in the vocational curriculum major.

^bAs in Table XXI above.

a variety of areas such as literature, art, and philosophy (high TI score) than did elementary majors who expressed a preference for overt action and for evaluating ideas more on the basis of their practical, immediate application (low TI scores). Secondary majors also expressed a greater interest in science and scientific activities and a tendency to be more logical, rational, and critical in their approach to problems (high TO score) than did elementary majors. Vocational majors scored highest of the three groups on the above two dimensions. Noteworthy is the complete reversal of the three curricular majors' mean scores on interest in painting, sculpture, music, literature, dramatics, and artistic activities generally (Es). On this scale, elementary majors scored highest, and vocational majors lowest.

Although means for the experienced teacher sample reveal a significant difference between elementary and secondary majors on only one dimension, namely, OPI Theoretical Orientation (Table XXII), it is noteworthy that on all six measures mean scores of elementary and secondary curriculum majors differ in the same direction for both samples (Tables XXI and XXII). Since the number of experienced vocational teachers was too small to permit analysis, no comparisons could be made between experienced vocational, elementary, and secondary teachers, and between experienced and inexperienced vocational majors.

Discussion. The results reported in Table XXI are meaningful only if interpreted in the light of evidence reported in Tables XV and XVI (p. 118). It will be recalled that elementary curriculum majors were largely women (446 women, 73 men), whereas just over half the secondary

majors were men (544 men, 492 women). Vocational curriculum majors were predominantly male (48 men, 10 women). There is little doubt that many of the differences reported above are attributable to the differing proportions of men and women in the three curriculum majors. Nevertheless, if we also recall that elementary females differed significantly from secondary females on the Thinking Introversion (TI) and on Education Profession Attitude Questionnaire (EPAQ) scores (supra, pp. 118-119), this indicates that there is present another factor, in addition to the sex factor, which accounts for some of the variation.

As stated above, both prospective and experienced teachers when classified by curriculum major differed significantly on the variable Theoretical Orientation (TO). Elementary and secondary prospective teachers when classified on the basis of sex also differed on this variable (Tables XV and XVI, p. 118). Tests of significance between TO means for male elementary and male secondary teaching candidates (52.7 and 55.1 respectively) indicated no difference between them. However, the same tests on the female sample yielded a \underline{t} significant beyond the .001 level of confidence. Female prospective secondary teachers (mean = 47.5) expressed a greater interest in science and scientific activities and a tendency to be more logical, rational, and critical in their approach to problems than did female prospective elementary teachers (mean = 41.3).

Similar \underline{t} tests on the Estheticism means (Tables XV and XVI, p. 118) revealed a significant \underline{t} for males only (beyond the .01 level of confidence). That is, male prospective elementary teachers obtained a

significantly higher mean (48.0) on Es than did male secondary majors (mean = 43.7).

The remaining variable that discriminated between prospective elementary, secondary, and vocational teachers, namely, level of aspiration deserves comment. Inasmuch as secondary positions typically rate higher on the Education Profession Prestige Scale (supra, p. 108) than elementary positions, it is not surprising that the aspiration levels of secondary majors as measured by EPAS were higher than those of elementary majors. Consequently, since differences related to Hypothesis 2.1 are "built-in" to EPAS, this scale is not meaningful in the present context.

In summary, although five of the six attitude scales discriminated between prospective teachers classified by curriculum major, only four of these are meaningful in the present context. Of these four, when account is taken of male-female differences, three, namely, TI, TO, and EPAQ, discriminated between female candidates classified by curriculum major. They did not discriminate between male curriculum majors. The remaining one, namely Es, discriminated between male but not between female curriculum majors.

It is noteworthy that experienced teacher means of elementary and secondary majors (Table XXII, page 130) differed in the same direction as did prospective teacher means on the four variables, TI, TO, Es, and EPAQ, but on only one of these, specifically, TO, did the difference reach statistical significance. The other three scales did not discriminate between experienced teachers classified by curriculum major.

One explanation for the apparent similarity between experienced secondary and experienced elementary teachers is that differences present among novices tend to disappear in time due to the influence of reference group processes. This would be particularly true for attitudes respecting the policy of the professional organization (EPAQ).

Another possibility is that this experienced teacher sample was a select group whose attitudes were less divergent than those of a representative sample of practicing Alberta elementary and secondary teachers.

Hypothesis 2.2: Education students classified by subject matter field of concentration differ significantly in attitudes.

Findings. Table XXIII presents the results of tests of differences between means of groups of Education students classified by subject matter field of concentration. Four F ratios indicate differences, significant beyond the .001 level of confidence, on the variables Thinking Introversion, Theoretical Orientation, Estheticism, and Level of Education Profession Aspiration.

Discussion and further analysis. As with curriculum majors, the three OPI scales, TI, TO, and Es discriminated also between subject matter field groups of prospective teachers. Noteworthy is the similarity between mathematics, physical science and biological science means. In comparing the eighteen pairs of mathematics, physical science and biological science means the only significant difference occurred between biological science and physical science means on TO. It is significant

TABLE XXIII

BASIC DATA FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN PROSPECTIVE
TEACHERS CLASSIFIED BY SUBJECT MATTER FIELD OF CONCENTRATION^a

Subject-Matter Major	N	OPI Attitude Scale ^b				EPAQ Mean	LEPA	
		TI Mean	SI Mean	TO Mean	Es Mean		N	Mean
English	179	<u>53.6</u>	50.7	45.4	60.3	48.7	170	48.3
Social Studies	298	48.7	49.1	44.9	50.4	49.4	284	48.3
French & Foreign Lang.	128	46.7	49.7	43.3	51.7	49.2	118	45.3
Physical Sciences	104	45.4	49.8	<u>58.2</u>	<u>40.6</u>	48.5	100	<u>55.2</u>
Mathematics	150	45.3	51.4	55.7	<u>40.6</u>	<u>45.5</u>	145	51.2
Biological Sciences	125	45.2	50.1	51.9	45.9	48.6	117	51.8
Fine Arts	49	50.3	<u>51.7</u>	44.3	<u>63.9</u>	49.5	46	45.6
Physical Education	74	<u>39.1</u>	46.7	42.0	45.3	48.8	67	44.5
Household Economics	79	44.7	<u>45.8</u>	43.1	54.3	49.4	77	47.6
Business Education	31	46.9	48.9	45.7	46.8	49.1	31	44.9
Early Childhood Educa- tion	57	43.4	48.4	<u>40.1</u>	54.4	<u>50.3</u>	55	<u>40.1</u>
Total	1274 ^c	47.2	49.5	47.4	50.1	48.7		51.5
F ratio		7.99	1.28	20.3	33.4	1.00		6.99
Significance		.001	NS	.001	.001	NS		.001

^aHighest and lowest means underlined.

^bOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration.

^cTotal does not include (1) experienced teachers, (2) degree holders, (3) persons who have since high school spent two or more years away from school or university, and (4) majors with N's smaller than 10.

that Ryans treated secondary mathematics and secondary science teachers as a combined group (2, pp. 197,297-298). The present study, although tapping attitude dimensions different from those of the Teacher Characteristics study, supports Ryans' treatment.

Ryans' analyses showed little difference between secondary social studies and English majors which were also treated as a single group. English majors in the present study scored significantly higher than social studies majors on Thinking Introversion and, especially, on Estheticism. Ryans' treating secondary English and social studies teachers as a combined group is hence only partially supported in the present study. On the other hand, since there were no significant differences on the six ESAI scales between English and fine arts majors, the present study supports treating these two majors as a single group. For the same reason social studies and French and foreign language majors may be treated as one group.

The fine arts means on OPI Estheticism tend to confirm the validity of this scale. As expected, fine arts majors scored highest of all subject matter field groups on this dimension.

Inasmuch as some subject matter fields are primarily chosen by men and other subject matter fields by women, the possibility of male-female attitude differences contributing to some of the differences noted prompted a further analysis for male and female sub-samples treated separately. The three subject matter field groups suggested above (English-fine arts, social studies-French and foreign language, and mathematics-science) were chosen. A second possible source of attitude

differences, in light of the age differences noted earlier (supra, p. 121), suggested classifying respondents by year as well, thus controlling age differences somewhat.

Tables XXIV and XXV, page 139, present the results of analyses of mean scores on the six attitude variables for prospective teachers classified by year and by subject matter field of concentration. It is noteworthy that three variables discriminated between subject matter field majors and that these three did so consistently regardless of sex or year.

All six F ratios for Thinking Introversion (TI) are significant at the .03 level of confidence or better. In addition, in all six cases the mean scores of English-fine arts majors were highest, those of mathematics-science majors lowest.

All six F ratios for Theoretical Orientation are significant at the .04 level of confidence or better. In all six cases mathematics-science means were highest and in five of these, social studies-French and foreign language means were lowest.

All six F ratios for Estheticism are significant beyond the .001 level of confidence. English-fine arts means were consistently highest; mathematics-science means were consistently lowest.

The results presented above tend to add strong support to the earlier findings that prospective teachers classified by subject matter field of concentration differ in attitudes (Table XXIII, p. 135). They also tend to confirm the findings of Andrews and of MacLean, Gowan and Gowan reported in Chapter III.

TABLE XXIV

BASIC DATA FOR THE TESTS OF DIFFERENCES IN ATTITUDES BETWEEN MALE
TEACHING CANDIDATES CLASSIFIED BY SUBJECT MATTER FIELD MAJOR

		OPI Attitude Scales ^a						
		TI	SI	TO	Es	EPAQ	LEPA	
	N	Mean	Mean	Mean	Mean	Mean	N	Mean
<u>First Year</u>								
English-Fine Arts	22	52.8	47.4	48.0	50.5	52.5	21	54.8
Soc. Studies-French, Foreign Language	92	50.6	49.9	49.5	45.5	47.0	84	57.9
Math.-Science	142	46.2	53.2	58.3	40.9	46.0	134	55.5
Total	256	48.3	51.5	54.2	43.4	46.9	239	56.3
<u>F ratio</u>		2.19	2.25	16.8	7.46	2.11		0.79
Significance		.02	NS	.001	.001	NS		NS
<u>Second Year</u>								
English-Fine Arts	14	59.4	55.0	55.1	58.1	49.1	14	59.6
Soc.Studies-French, Foreign Language	66	51.6	49.2	50.4	47.4	54.7	58	54.1
Math.-Science	95	46.5	47.4	57.1	39.6	49.5	93	56.9
Total	175	49.5	48.7	54.4	44.0	51.4	165	56.2
<u>F ratio</u>		6.32	1.69	4.43	13.5	2.84		1.11
Significance		.005	NS	.01	.001	NS		NS
<u>Third-Fourth Years</u>								
English-Fine Arts	15	62.1	52.1	57.5	61.3	49.1	12	58.3
Soc.Studies-French, Foreign Language	46	53.4	50.5	52.3	47.7	55.9	45	53.5
Math.-Science	57	47.9	48.4	59.4	39.0	53.5	54	61.1
Total	118	51.8	49.7	56.4	45.2	53.8	111	57.3
<u>F ratio</u>		5.19	0.38	3.22	14.1	1.11		2.03
Significance		.01	NS	.04	.001	NS		NS

^aOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration.

TABLE XXV

BASIC DATA FOR THE TESTS OF DIFFERENCES IN ATTITUDES BETWEEN FEMALE
TEACHING CANDIDATES CLASSIFIED BY SUBJECT MATTER FIELD MAJOR

	N	OPI Attitude Scales ^a				EPAQ Mean	LEPA	
		TI	SI	TO	Es		N	Mean
		Mean	Mean	Mean	Mean			
<u>First Year</u>								
English-Fine Arts	108	53.3	53.2	45.8	59.5	45.9	99	48.1
Soc. Studies-French, Foreign Language	148	47.3	52.2	43.5	52.1	46.4	140	44.8
Math.-Science	77	44.2	50.4	51.2	46.7	42.7	71	44.2
Total	333	48.5	52.1	46.0	53.3	45.4	310	45.7
<u>F</u> ratio		10.5	0.76	8.38	24.7	1.94		2.65
Significance		.001	NS	.001	.001	NS		NS
<u>Second Year</u>								
English-Fine Arts	77	52.6	50.4	43.6	63.8	50.9	75	44.1
Soc. Studies-French, Foreign Language	122	48.2	47.1	42.2	54.2	49.1	111	43.1
Math.-Science	47	44.9	51.4	51.9	46.0	45.8	45	44.9
Total	246	48.9	48.9	44.5	55.6	49.0	231	43.8
<u>F</u> ratio		4.55	2.07	8.47	30.4	2.37		0.39
Significance		.01	NS	.001	.001	NS		NS
<u>Third-Fourth Years</u>								
English-Fine Arts	42	57.2	44.7	46.8	65.6	54.5	41	48.8
Soc. Studies-French, Foreign Language	50	51.6	47.7	43.5	55.5	52.7	49	46.8
Math.-Science	30	47.6	49.6	51.4	47.3	53.7	38	48.3
Total	122	52.5	47.1	46.6	57.0	53.6	118	47.8
<u>F</u> ratio		3.74	1.11	3.21	19.3	0.22		0.35
Significance		.03	NS	.04	.001	NS		NS

^aOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration.

Because of the attitude differences between the various subject matter field majors one might surmise that the subject matter field served as a reference group for prospective teachers insofar as the attitudes measured by TI, TO, and especially Es are concerned. The subject matter field group evidently did not serve as a reference group for prospective teachers insofar as the attitudes measured by SI, EPAQ and LEPA are concerned.

Although discussion of the implications of these differences will be left to Chapter VII, where Hypothesis 5 is tested, it is noteworthy that Social Introversion and especially Education Profession Attitude Questionnaire means show a fairly consistent progression as freshmen, juniors and sophomores and seniors are considered.

Hypothesis 2.3: Attitudes of Education students with teaching experience are significantly different from those of prospective teachers.

Findings. Table XXVI presents the mean scores of Education students classified according to teaching experience. Three of the variables, namely TI, TO, and EPAQ, show t tests significant beyond the .001 level. Two others, Es and LEPA, are significant beyond the .02 level. In all five cases, the experienced teacher scores yielded higher means than did the prospective teacher scores.

It will be recalled that the proportion of men to women in both the experienced and prospective teacher groups was approximately three to four (supra, p. 92). The ratio of elementary to secondary majors in both groups was similarly equal and approximately one-half. The

TABLE XXVI

BASIC DATA FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN EXPERIENCED
AND PROSPECTIVE TEACHERS

	N	OPI Attitude Scales ^a				EPAQ Mean	LEPA	
		TI Mean	SI Mean	TO Mean	Es Mean		N	Mean
Education undergraduates with no teaching experience	1780	49.5	49.9	49.6	49.7	49.1	1668	49.5
Education undergraduates with teaching experience	203	54.4	50.7	53.3	52.6	58.7	185	52.3
Total	1983	50.0	50.0	50.0	50.0	50.0	1853	50.0
<u>t</u>		4.40	0.72	3.28	2.61	8.97		2.44
Significance		.001	NS	.001	.01	.001		.02

^aOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration.

differences noted cannot be accounted for in terms of either sex differences or curriculum major differences.

The highly significant difference in mean scores between experienced and prospective teachers on EPAQ is worthy of note. Experienced teachers, as anticipated, expressed attitudes considerably more in accord with the policy statements of the professional organization. This may be explained in terms of their being more familiar with the official policy of the ATA, or alternately, by the fact that the written policy of the ATA reflects the collective opinions of practicing Alberta teachers. Reference group processes are presumably at work among

practicing teachers influencing their attitudes respecting the goals and policies of the association. The fact that experienced teacher scores yielded significantly higher EPAQ means than did those of prospective teachers serves as empirical validation of the instrument.

Since aspiration level is an indication of one's self-concept and typically reflects more immediate rather than distant goals, it is probably reasonable to assume that experienced teachers' aspirations would be higher than those of prospective teachers. This explanation appears sound when account is taken of the higher levels of aspiration of older as compared with younger students reported earlier (supra, p. 122).

Inasmuch as the various subject matter field groups differ on TI, TO, and Es scores (Tables XXIV and XXV, pp. 138-139), differences on the other three discriminating variables (TI, TO, Es), may be due at least in part to the differing proportions of the various subject matter field majors within the prospective and the experienced teacher groups. They cannot be totally accounted for by differences in maturity as Estheticism shows no relationship to age (Table XVIII, p. 122). They also cannot be a result of curriculum major differences as approximately two-thirds of both the prospective and experienced teachers are in the secondary curriculum major (supra, Tables V and VI, pp. 93,94).

Conclusion

While on the surface the evidence presented above appears to provide substantial support for Hypothesis 2.1 that Education students classified by curriculum major differ significantly in attitudes, further

analysis revealed that the situation was not as simple as the five significant F ratios might lead one to believe. Only four of the discriminating variables, namely Thinking Introversion, Theoretical Orientation, Estheticism and Education Profession Attitude Questionnaire proved meaningful in the present context. When the male and female samples were treated separately, for male prospective teachers, only one variable, Estheticism, served to discriminate between curriculum majors. For males, the hypothesis was therefore tentatively rejected. The t tests on scores of the female sample indicated that there were significant differences between elementary and secondary teaching candidates on three variables, namely Theoretical Orientation, Thinking Introversion, and Education Profession Attitude Questionnaire. Hypothesis 2.1 was partially supported for the female prospective teacher group. With experienced teachers, only one t , between elementary and secondary major means on the variable Theoretical Orientation, was significant. For this group, as well as for male prospective teachers, Hypothesis 2.1 was tentatively rejected on the basis of present data.

Hypothesis 2.2 that Education students classified by subject matter field of concentration differed significantly in attitudes was substantially supported. Four F ratios indicated significant differences beyond the .001 level of confidence on variables TI, TO, Es, and LEPA. When classified by sex and year of preparation, Thinking Introversion, Theoretical Orientation and Estheticism continued to discriminate consistently between subject matter field groups.

Hypothesis 2.3 that attitudes of Education students with teaching

experience are significantly different from those of prospective teachers was substantially supported in that t tests on means in three of the six EPAQ variables were significant beyond the .001 level of confidence, and in two others were significant beyond the .02 level. Only Social Introversion failed to discriminate between experienced and prospective teachers.

Of the three sub-hypotheses under investigation in this part of the study, two were substantially supported and one was only partially supported. Hypothesis 2 that Education students classified by membership group differ in attitudes was at least partially supported.

III. ATTITUDE DIFFERENCES BETWEEN CLASSIFICATIONS BASED ON ACADEMIC ACHIEVEMENT

Hypothesis 3 presents for testing a supposition that there are differences in attitudes between Education students classified by proficiency in the pre-service teacher preparation program as measured by level of academic achievement.

Hypothesis 3: Education students classified by academic proficiency differ significantly in attitudes.

Findings. Table XXVII compares the mean scores on the six ESAI scales for five levels of academic achievement. Significant F ratios were obtained in three cases, namely on TI, TO, and Es. In all three, the highest scores were achieved by the group whose self-rating on academic achievement was highest as well.

Discussion and further analyses. Since there is no consistent progression in the TO and Es means presented below, these differences are difficult to explain. Differences in means on Thinking Introversion increase

TABLE XXVII

BASIC DATA FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN PROSPECTIVE TEACHERS CLASSIFIED BY SELF-REPORTED LEVEL OF ACADEMIC SUCCESS

Self-Reported Cumulative University or Grade XII Average	N	OPI Attitude Scales ^a				EPAQ Mean	LEPA	
		TI Mean	SI Mean	TO Mean	Es Mean		N	Mean
50 or less	197	47.4	49.0	50.0	49.0	48.8	183	49.9
50 to 64	680	47.5	49.0	48.3	48.5	49.5	625	49.4
65 to 69	467	50.2	50.9	49.8	50.6	48.4	444	50.5
70 to 74	249	50.7	50.6	50.5	49.9	48.5	241	47.7
75 and over	175	55.3	51.0	52.6	52.7	50.6	167	49.9
Total	1768 ^b	49.4	49.9	49.6	49.7	49.1	1659	49.6
<u>F</u> ratio		11.9	1.71	3.47	3.50	0.87		1.51
Significance		.001	NS	.01	.01	NS		NS

^aOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration.

^bExcludes twelve prospective teachers who did not report a level of academic achievement.

progressively as academic achievement level increases. Five of the ten t tests carried out between pairs of means were significant. It is not surprising to find a significant relationship between level of academic achievement on the one hand and interest in a wide variety of areas and

liking for reflective thought (TI) on the other.

It is interesting to note the evident absence of relationship between academic achievement and agreement with the expressed policy of the ATA. Either high ability students were no more knowledgeable about ATA policy, or if they were, felt no more obligated to concur with it. Interaction with their peer group may have been effective in causing them to acquire attitudes common to this group irrespective of their individual achievement level.

Of significance too is the absence of correlation anticipated between level of academic achievement and level of occupational aspiration, as measured by EPAS. Apparently prospective teachers who reported high academic averages (75 or over) did not on the whole aspire to positions rating any higher on EPPS than did Education students reporting low academic averages (59 or less).

In order to check for possible differences between the sexes on this variable, the analysis was repeated for males and females taken separately. Table XXVIII presents the results of this analysis. This table reveals that regardless of self-reported level of academic achievement, the aspirations of men were higher than those of women at the same level of academic ability or any other level. As in the case of the combined sample, the F ratio for males was not significant. However, for prospective female teachers the highly significant F ratio (.005) indicates a relationship between level of aspiration and self-reported level of achievement. Further examination of the means reveals that women who reported a higher level of academic achievement in general

TABLE XXVIII

BASIC DATA FOR THE TESTS OF DIFFERENCES IN LEVEL OF ASPIRATION
BETWEEN PROSPECTIVE MALE AND FEMALE TEACHERS CLASSIFIED BY
SELF-REPORTED LEVEL OF ACADEMIC SUCCESS

Self-Reported Grade XII or Cumulative University Average	Males			Females		
	N	Mean	S ²	N	Mean	S ²
	Level of Aspiration			Level of Aspiration		
59 or less	93	57.2	188	83	42.4	156
60 to 64	244	55.6	236	319	43.8	159
65 to 69	157	56.7	226	226	45.5	147
70 to 74	58	54.4	233	139	44.0	164
75 and over	28	53.0	134	117	48.4	176
Total	580	55.9	221	884	44.8	159
F ratio		0.75			3.91	
Significance		NS			.005	

reported a higher level of aspiration. The results of t tests between pairs of means indicate that the aspirations of women reporting the highest level of achievement (75 and over) were significantly higher than those of the lowest (59 and under) and of the second lowest (60 to 64) groups.

It is interesting to speculate why academic success is related to the aspiration levels of women but not of men. It appears that women view academic success as being a requirement for acceptance into positions ranking higher on the prestige scale. For women in Education, this may be at least partially true. On the other hand, the results

support the probability that men believe that maleness alone, irrespective of academic success, is enough qualification for such positions. If such indeed is the case, persons involved in screening applicants and selecting from among them to fill various Educational positions should be cognizant of this fact. It may be that women in Education find the appointment of lower academic ability males to positions of high status both a source of resentment and of frustration for them. They may feel that they must be "so much better" in order to qualify for "male" positions. These findings may be a reflection of the male-female differences stemming from our culture.

Conclusion

The findings presented above reveal that only one of the three significant F ratios calculated on means of prospective teachers classified by academic achievement was meaningful. In the case of the variable Thinking Introversion alone was there a progressive increase in means as academic achievement level increased. Additional analyses by sex on the variable level of aspiration revealed that for females but not for males aspiration level was significantly related to self-reported academic achievement level. Hypothesis 3 is therefore only partially supported. In light of this partial support, the utility of the variable self-reported level of academic achievement to the subsequent analyses in the present study is highly questionable.

IV. ATTITUDE DIFFERENCES BETWEEN EDUCATION STUDENTS CLASSIFIED
BY CATEGORY OF POSITIONS ASPIRED TO

Hypothesis 4: Education students classified by category of Education positions aspired to differ significantly in attitudes.

Findings. Table XXIX presents the results of analyses of variance performed on the six category means in each of the five attitude scales. Significant F ratios were obtained on three OPI attitude scales, namely TI, TO, and Es. There appeared to be a significant relationship between category of positions aspired to and the attitudes held by Education students. Of interest are the extreme mean scores on each of the discriminating scales. Persons aspiring to supervisory positions scored lowest on liking for reflective thought and interest in a wide variety of areas. They preferred overt action and tended to evaluate ideas on the basis of their practical, immediate application (low TI scores). Those aspiring to counselling positions had the highest means on this dimension.

Aspirants to research positions scored highest on OPI Theoretical Orientation indicating an interest in science and scientific activities and a preference for using the scientific method in thinking and problem solving. Persons aspiring to service positions scored lowest on TO.

The Estheticism scale discriminated best among classifications based on category of positions aspired to. Six of the fifteen t tests performed on pairs of means were significant. As in the case of TO, aspirants to supervisory positions scored lowest on interest in artistic matters and activities, and aspirants to counselling positions scored

TABLE XXIX

BASIC DATA USED IN TESTING FOR ATTITUDE DIFFERENCES BETWEEN EDUCATION STUDENTS CLASSIFIED BY CATEGORY OF EDUCATION POSITION ASPIRED TO^a

Category	N	OPI Attitude Scales ^b				EPAQ Mean
		TI Mean	SI Mean	TO Mean	Es Mean	
Classroom teaching	1086	50.0	50.7	48.8	51.0	48.8
Supervision of classroom teachers	44	<u>45.0</u>	47.9	49.6	<u>43.5</u>	<u>47.7</u>
Administration	282	47.0	48.7	51.6	45.4	49.7
Counselling	165	<u>52.6</u>	<u>47.6</u>	50.1	<u>52.7</u>	49.2
Research	37	51.3	<u>51.1</u>	<u>54.9</u>	47.5	<u>52.5</u>
Services	74	46.4	50.0	<u>48.7</u>	45.7	49.4
Total	1688 ^c	49.5	50.0	49.5	49.7	49.0
<u>F</u> ratio		4.82	1.94	2.69	10.7	0.76
Significance		.001	NS	.05	.001	NS

^aHighest and lowest means for each variable underlined.

^bOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire.

highest. There was a significant difference on the Es dimension between aspirants to classroom teaching positions and aspirants to positions involving supervision of classroom teachers.

The mean scores of aspirants to Classroom Teaching and Administrative positions deserve comment. None of the means for either category were extreme. However t tests between means on the three discriminating dimensions (TI, TO, and Es) are all significant, indicating that

persons aspiring to administrative posts held attitudes significantly different from those held by individuals aspiring to classroom teaching positions.

Discussion. It appears conclusive that attitudes of individuals aspiring to different categories of Education positions differ significantly. Although both may be due to some other factor, it is probable that the attitude differences reported were a result of the differences in aspiration, or the differences in aspiration a result of the attitude differences. Reference group theory postulates that attitude differences, at least to some extent, are a result of aspiration differences. Persons aspiring to different positions tend, according to this theory, to acquire behavior patterns and attitudes appropriate to the aspired for occupational role by means of the process of anticipatory socialization. On the basis of the present evidence, any conclusions regarding such attitude change would be highly tentative. Only a longitudinal study would reveal unequivocally whether they do occur and whether the process of anticipatory socialization is meaningful, in the present context, to explain the attitude differences between sub-groups aspiring to different categories of positions.

If the differences noted between aspirants to teaching and aspirants to administrative positions persist and aspirants achieve the sought positions, these attitude differences may be a source of conflict between teachers and administrators. On the other hand, if the attitude differences are a result of anticipatory socialization, these attitude differences may serve to ease the transition into the future position in

Education.

Conclusion

Hypothesis 4 which states that Education students classified by category of position aspired to differ significantly in attitudes was at least partially supported in that for two of the five attitude variables computations yielded F ratios significant beyond the .001 level of confidence. For a third variable the significance was .05. Only two variables, namely Social Introversion and Education Profession Attitude Questionnaire did not discriminate between categories.

V. SUMMARY

In this chapter four hypotheses concerning attitude differences among various classifications of Education students were tested in order to determine whether the resulting groups served as possible reference groups influencing the attitudes of prospective teachers and to determine the possible utility of these classifications to the subsequent analyses in the present study.

Results of Tests of Hypothesis 1

Hypothesis 1 that there are attitude differences between Education students classified by social category was at least partially supported. The chief support lay in the social categories age and sex. The social categories marital status and socio-economic status yielded inconclusive results.

Results of Tests of Hypothesis 2

Hypothesis 2 that Education students classified by membership group differ in attitudes was substantially supported. Subject matter fields of concentration and prospective--experienced teacher membership groups yielded the greatest number of significant differences in attitudes. Curriculum major appeared to yield significant attitude differences for female prospective teachers only.

Results of Tests of Hypothesis 3

Hypothesis 3 that prospective teachers classified by academic proficiency differ significantly in attitudes was only partially supported. Of the three significant F ratios only Thinking Introversion revealed a progressive increase in means as academic achievement increased. Additional analysis revealed that for females but not for males there was a significant F ratio and a progressive increase in level of aspiration (LEPA) means as academic achievement increased.

Results of Tests of Hypothesis 4

Hypothesis 4 that Education students classified by category of Education position aspired to differ significantly in attitudes was substantially supported in that three of the five variables, namely Thinking Introversion, Theoretical Orientation, and Estheticism discriminated between categories.

REFERENCES FOR CHAPTER VI

1. Fisher, R. A. The Design of Experiments (7th edition). New York: Hafner Publishing Co., Inc., 1960.
2. Ryans, D. G. Characteristics of Teachers. Washington: American Council on Education, 1960.

CHAPTER VII

ANALYSIS AND RESULTS: DIFFERENCES BETWEEN FRESHMAN, JUNIOR, SOPHOMORE AND SENIOR TEACHING CANDIDATES

In Chapter VI of this study four hypotheses that there are attitude differences among groups of Education students classified by social category, teaching membership group, academic achievement, and category of Education positions aspired to were tested. Significant differences in means were found in testing all four. Chapter VII presents for testing the hypothesis that several of the attitude differences noted in Chapter VI are a result of attitude change among Education students. A cross-sectional approach is employed in testing this hypothesis. Three sub-hypotheses form the basis for the empirical test of Hypothesis 5.

I. ATTITUDE DIFFERENCES BETWEEN TEACHING CANDIDATES CLASSIFIED BY ANTICIPATED LENGTH OF PREPARATION PROGRAM

Hypothesis 5.1: Prospective teachers classified by anticipated length of preparation program differ significantly in attitudes.

Findings. The results of tests of differences between Education students classified by number of years of pre-service preparation anticipated are presented in Table XXX. Significant F ratios were obtained on four variables, namely, TI, TO, EPAQ, and LEPA. In all four cases those anticipating four years of pre-service education scored higher means than

TABLE XXX

BASIC DATA FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN TEACHING
CANDIDATES CLASSIFIED BY NUMBER OF YEARS OF PRE-SERVICE
EDUCATION ANTICIPATED

Pre-Service Education Anticipated	OPI Attitude Scales ^a					EPAQ Mean	LEPA	
	N	TI Mean	SI Mean	TO Mean	Es Mean		N	Mean
2 years	501	45.4	50.9	43.7	50.6	46.8	462	44.5
3 years	318	48.5	48.9	48.7	50.5	49.6	303	49.5
4 or more years	744	50.7	49.1	51.9	49.3	50.2	706	52.1
Total	1563	48.5	49.6	48.6	50.0	49.0	1471	49.2
<u>F</u> ratio		19.7	2.79	47.9	1.55	8.98		40.1
Significance		.001	NS	.001	NS	.001		.001

^aOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ; Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration.

did those anticipating two years of pre-service education. Mean scores of those anticipating three years were between the two- and the four-year means.

When tests of significance were applied to Education students in their final year of a two-, three-, or four-year pre-service teacher education program, similar differences were noted (Table XXXI).

Scores of four-year candidates yielded significantly higher means on liking for reflective thought and interest in a wide variety of areas (TI). They expressed a greater preference for using the scientific method in thinking and a greater interest in science and scientific

TABLE XXXI

BASIC DATA FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN TEACHING
CANDIDATES IN THEIR FINAL YEARS OF PRE-SERVICE EDUCATION
CLASSIFIED BY YEAR OF PREPARATION

Year of Preparation	N	OPI Attitude Scales ^a					EPAQ Mean	LEPA	
		TI Mean	SI Mean	TO Mean	Es Mean			N	Mean
Second year of 2 antici- pated	194	45.8	49.6	43.7	52.2	48.7		182	45.5
Third year of 3 antici- pated	60	47.4	48.6	47.2	51.3	52.0		60	48.8
Fourth year of 4 anti- cipated	118	55.7	46.5	52.1	51.3	55.9		113	53.3
Total	372	49.2	48.5	46.9	51.8	51.5		295	48.6
<u>F</u> ratio		17.4	1.67	11.3	0.19	9.48			9.56
Significance		.001	NS	.001	NS	.001			.001

^aOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration.

activities (TO). Four-year candidates, as might be anticipated by reason of their age, reported a higher level of occupational aspiration (LEPA). They also concurred with the expressed policy of the professional organization (EPAQ) more than did two-year candidates. As with the entire sample of prospective teachers, means of three-year candidates in their final year fell between those of the two- and four-year candidates (Table XXXI).

Discussion and further analysis. The apparent relationship

between number of years of preparation and attitudes and aspirations would seem to have interesting implications. The possible consequences of higher aspiration levels by three- and four-year candidates are worthy of note.

Since aspiration level appears to bear positive relationship to the number of years of pre-service education, it would seem that teaching candidates who have had or anticipate more years of pre-service education aspire to certain Education positions in preference to others. Four possibilities that are suggested by the hierarchy in Table XI (supra, p. 108), are enumerated below:

1. They may elect secondary school, junior college or university teaching positions which rank higher on EPPS than do similar nursery school, kindergarten or elementary school positions.
2. They may choose city or town teaching positions which rank higher on EPPS than do corresponding village or rural school positions.
3. They may elect, at the same curriculum level, non-teaching positions (counselling, research, administration, supervision of teachers) in preference to the lower ranking teaching positions.
4. Since vocational positions typically rank lower than academic positions, vocational teachers may switch from a preference for teaching vocational subjects to a preference for teaching academic subjects.

Inasmuch as the present study is cross-sectional rather than longitudinal, the above conclusion respecting length of time spent in pre-service preparation and aspiration level is of course highly speculative in that it assumes that the differences are a result of aspiration

change. Whether aspirations do change as indicated (a) for some groups (for example, males), but not for others (for example, females), (b) for all groups, or (c) for none, is suggestive of further research.

In consideration of the male--female attitude differences reported in Chapter VI and of the probability that a greater ratio of two- than of three- or of four-year candidates were women it was thought desirable to determine whether the attitude differences noted above on TI, TO, EPAQ, and LEPA were present among freshmen anticipating two, three and four years of pre-service education. Table XXXII presents the results of this further analysis.

TABLE XXXII

BASIC DATA FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN FRESHMEN
TEACHING CANDIDATES CLASSIFIED BY NUMBER OF YEARS
OF PRE-SERVICE TEACHER EDUCATION ANTICIPATED

Length of Preparation Anticipated	OPI Attitude Scales ^a					EPAQ Mean	LEPA	
	N	TI Mean	SI Mean	TO Mean	Es Mean		N	Mean
2 years	273	44.6	52.0	43.2	49.5	45.6	249	43.5
3 years	74	48.0	48.7	49.1	49.9	46.8	70	50.0
4 or more years	247	48.5	51.9	52.4	48.2	46.3	233	51.5
Total	594	46.6	51.5	47.8	49.0	46.1	552	47.7
F ratio		5.14	1.46	30.0	0.81	0.34		20.9
Significance		.01	NS	.001	NS	NS		.001

^aOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration.

A cursory examination of the results suggests that three of the four differences between prospective two-, three- and four-year candidates, namely those measured by TI, TO, and LEPA, were present at the beginning of the program. This provides strong evidence in support of the hypothesis that prospective teachers classified by length of preparation program anticipated differ significantly in attitudes.

The results presented in Tables XXXI and XXXII have another meaning. Although comparison of TI, TO and LEPA means on these two tables may imply some change in the attitudes measured by the three variables between freshman and final year of pre-service education, the main attitudes subject to significant change by exposure to the influences surrounding a teacher preparation program appear to be those measured by EPAQ. There were no significant differences between EPAQ means of freshmen aspiring to two, three, or four years of pre-service preparation (Table XXXII), but there was a highly significant difference between teaching candidates in the final years of two-, three- and four-year programs of preparation (Table XXXI). In addition, the EPAQ means of the second-, third- and fourth-year groups were progressively higher than the freshman means.

Since this finding has pertinence to the following hypothesis, discussion of the implications of it will be presented later.

II. ATTITUDE DIFFERENCES BETWEEN FRESHMAN, JUNIOR, SOPHOMORE AND SENIOR TEACHING CANDIDATES

Hypothesis 5.2: Prospective teachers classified by number of years

spent in preparation program differ significantly in attitudes.

Findings. Table XXXIII presents the results of the tests of significance between means of freshmen, junior, sophomore, and senior teaching candidates. Five of the six F ratios are significant beyond the .05 level of confidence. Three of these are significant beyond the .001 level. As might be expected these are the same five variables on which significant differences appeared between Education students classified by age of respondent (vide supra, Table XVIII, p. 122). In addition, the general tendency for means of older students to be higher on TI, TO, EPAQ, and LEPA and to be lower on SI was duplicated by students with more years of preparation.

Since a number of these attitude differences may be attributable to the differing lengths of teacher preparation program anticipated, this possibility suggested the advisability of comparing freshmen, juniors, sophomores and seniors among those anticipating four years of pre-service education. Table XXXIV presents the results of this comparison. Differences on three variables, namely, TI, SI and EPAQ are significant beyond the .01 level of confidence. There was a general tendency for those in succeeding years to achieve higher scores on liking for reflective thought and interest in a wide variety of areas (TI), and on agreement with the expressed policy of the teachers' organization (EPAQ). There was a similar tendency for sophomore and senior SI means to be lower indicating greater interest in being with people and greater satisfaction gained from social contacts.

TABLE XXXIII

BASIC DATA FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN FRESHMAN, JUNIOR, SOPHOMORE,
AND SENIOR TEACHING CANDIDATES^a

Year	OPI Attitude Scales ^b										LEPA Mean	S ²		
	TI		SI		TO		Es		EPAQ					
	N	Mean	S ²	Mean	S ²	Mean	S ²	Mean	S ²	Mean			S ²	
First year	743	47.5	207	51.4	233	48.5	202	49.1	192	46.3	182	694	48.6	207
Second year	501	48.3	216	48.3	211	47.7	235	50.9	228	50.0	178	473	48.5	213
Third year	201	48.7	246	48.4	208	49.5	233	50.2	285	52.2	203	191	50.7	224
Fourth year	118	55.7	232	46.5	242	52.1	227	51.3	250	55.9	269	113	53.3	216
Total	1563	48.5	217	49.6	219	48.6	219	50.0	220	49.0	190	1471	50.8	212
F ratio		10.5		7.01		3.15		1.95		24.0			4.55	
Direction of variance change			R		-		R		R		-			R
Significance	.001	NS	.001	NS	.025	NS	NS	NS	1-3 (.02)	.001	1-4 2-4 (.02)	.005	NS	NS

^aDegree holders, vocational curriculum majors omitted.

^bOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion;
TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire;
LEPA: Level of Education Profession Aspiration. R: Reverse of that hypothesized.

TABLE XXXIV

BASIC DATA FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN FRESHMAN, JUNIOR, SOPHOMORE,
AND SENIOR TEACHING CANDIDATES ANTICIPATING FOUR OR MORE YEARS
OF PRE-SERVICE EDUCATION

Year	OPI Attitude Scales ^a									
	TI		SI		TO		Es		EPAQ	
	N	Mean	S ²	Mean	S ²	Mean	S ²	Mean	S ²	Mean
First year	307	49.2	225	51.3	235	52.8	190	48.4	224	46.6
Second year	178	51.1	225	47.4	220	51.3	230	49.2	252	50.8
Third year	141	49.2	267	48.3	223	50.5	238	49.7	320	52.2
Fourth year	118	55.7	232	46.5	242	52.1	227	51.3	250	55.9
Total	744	50.7	234	49.0	231	51.9	215	49.3	253	50.2
F ratio		5.62		4.22		0.91		0.97		13.4
Direction of variance change			R		-		R		R	
Significance		.001	NS	.01	NS	NS	NS	NS	NS	.001 2-4(.02)
										NS
										NS

^aOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion;
TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire;
LEPA: Level of Education Profession Aspiration, R: Reverse of direction hypothesized.

Discussion and further analysis. It is noteworthy that the most consistent change in means occurs with the variable EPAQ. Mean scores increase in an orderly fashion as freshmen, juniors, sophomores and seniors are considered. Understandably, the highest F ratio was obtained in this case.

In the light of sex differences reported in Chapter VI, it was thought necessary to repeat the above analysis for males and females separately. Tables XXXV and XXXVI present summaries of the tests of significance performed on means of the male and of the female samples. The results are particularly enlightening for two reasons. First, differences noted in TI means between the various years of the combined sample appear to be due to the influence of the male sub-sample. In the female sub-sample differences in TI means did not reach statistical significance. Secondly, differences in SI means between freshmen, juniors, sophomores and seniors in the combined group appear to be due to the influence of the female sub-sample. There were no corresponding differences in SI means when males alone were considered.

The results also indicate that the relationship noted above for students with more pre-service preparation to attain higher EPAQ scores is the only relationship that held true for both groups when males and females were treated separately.

These findings are highly significant. When consideration is also given to those reported under Hypothesis 5.1, they seem to indicate that there is for the entire prospective teacher body a reference group which influences their attitudes respecting professional

TABLE XXXVI

BASIC DATA FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN FRESHMAN, JUNIOR, SOPHOMORE,
AND SENIOR FEMALE TEACHING CANDIDATES ANTICIPATING FOUR OR MORE YEARS
OF PRE-SERVICE EDUCATION^a

Year	OPI Attitude Scales ^b										LEPA Mean	N	S ²
	TI	SI	TO	Es	EPAQ	LEPA	TI	SI	TO	Es			
	N	Mean	S ²	Mean	S ²	Mean	N	Mean	S ²	Mean	S ²		
First year	137	50.8	243	51.7	256	50.1	185	55.3	192	45.8	199	131	52.0 167
Second year	84	51.9	205	46.0	178	46.9	212	55.5	206	50.6	165	83	54.2 133
Third year	67	49.5	266	46.2	187	45.1	221	57.6	211	52.8	164	62	54.0 122
Fourth year	59	56.3	234	45.4	199	47.2	166	55.0	255	54.7	252	57	51.1 149
Total	347	51.7	237	48.2	214	47.8	195	55.7	210	49.8			52.8
F ratio		2.37		4.34		2.17		0.49		7.35			1.15
Direction of variance change		-		H		-		R		-			H
Significance	NS	NS	.005	NS	NS	NS	NS	NS	.001	NS	NS	NS	NS

^aIndividuals anticipating four or more years of teacher preparation before accepting first teaching post.

^bOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration. H: As hypothesized; R: Reverse of direction hypothesized.

organization policy in the direction of agreement with it. When account is taken of the scores achieved by experienced teachers on EPAQ (Table XXVI, p. 141), this suggests the possibility that the reference group is one provided by experienced teachers and that anticipatory socialization is occurring among teaching candidates. It suggests too that the longer the time spent in preparation for teaching the more likely will it be that prospective teachers reflect experienced teacher attitudes respecting professional organization policy.

A second implication of the findings is that the "all student" reference group is not the only one influencing attitudes. The attitudes measured by Thinking Introversion appear to be influenced by a male reference group only. Male teaching candidates tended to shift from interest in knowledge which has immediate and practical application to a more "scholarly" orientation expressing greater interest in a wide variety of areas and a liking for reflective thought. Although the female sample showed some change in this direction, the difference did not reach statistical significance. Female teaching candidates were probably responding to another reference group that influenced in a positive direction their attitudes respecting desire to relate to others and to be helpful to them. The male sample showed no change on this dimension.

Whether the changes noted above on Social Introversion and Thinking Introversion were a result of the influences of a female teacher reference group and a male teacher reference group, whether they were a result of response to more inclusive female and male

university reference groups, or whether they were even more broadly based is open to speculation.

The above evidence appears to indicate that Hypothesis 5.2 that prospective teachers classified by number of years spent in preparation program differ in attitudes is supported in part. The support lies in significant differences on TI, SI, and EPAQ when males and females combined are considered, on TI and EPAQ when males alone are considered, and on SI and EPAQ when females alone are considered.

III. VARIANCE DIFFERENCES BETWEEN FRESHMAN, JUNIOR, SOPHOMORE AND SENIOR TEACHING CANDIDATES

Hypothesis 5.3: Variability from mean attitude scale scores decreases with increased length of preparation.

The above hypothesis was tested in two different ways. First, a simple comparison of variance scores on each variable was made between membership groups of Education students classified according to year of pre-service education.

Secondly, responses of Education students in the three largest subject matter field groups--English--Fine Arts; Social Studies--French and Foreign Language; and Mathematics--Science--were analyzed by year (first, second, and third and fourth combined) in order to determine whether subject matter field group differences decreased with increased length of preparation.

Results: Comparison of variances between freshman, junior, sophomore and senior teaching candidates. Variances for the combined sample of teaching candidates were presented in Table XXXIII (p. 162). When F ratios were calculated to test for significant differences between pairs of variances, only three of the thirty-six comparisons reached significance at the .02 level. All significant differences (Es, and EPAQ scales only) were in the reverse direction of that hypothesized. In other words, when the sample as a whole was considered, there was typically either no significant change in variances, or the variability increased.

The results of similar tests on the sub-sample anticipating four or more years of pre-service preparation reported in Table XXXIV, (p. 163), reveal a similar tendency. Only one of the thirty-six F ratios reached significance. This was at the .02 level and was in the opposite direction of that hypothesized.

When males were treated separately, none of the variance differences reached significance (Table XXXV, p. 165). Similarly, for the female sample (Table XXXVI, p. 166) none of the comparisons yielded significant F ratios.

Table XXXVII presents the results of comparisons of variances between prospective teachers in the three largest subject matter field groups (English-Fine Arts, Social Studies-French and Foreign Language, and Mathematics-Science). Again, the results reflect the findings reported above. None of the comparisons yielded significant F ratios.

TABLE XXXVII

COMPARISON OF VARIANCES BETWEEN FRESHMAN, JUNIOR, SOPHOMORE AND SENIOR TEACHING CANDIDATES IN THREE SUBJECT MATTER FIELD GROUPS

Year	OPI Attitude Scale ^a							
	TI		SI		TO		Es	
	N	Variance	N	Variance	N	Variance	N	Variance
First year	589	193		229		177		168
Second year	421	205		214		208		184
Third and fourth years	240	234		237		210		200
Total	1250	206		228		194		181
Significance		NS		NS		NS		NS
Direction of variance change		R		-		R		R

^aOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration. R: Reverse Direction of That Hypothesized.

The change in variance in three of the six variables was in the reverse direction. In the other three cases no orderly increase or decrease in variances was evident. Evidence reported to this point supports rejection of Hypothesis 5.3. The hypothesis is submitted to another test in the following sub-section.

Results: Comparison of differences in attitudes between three subject matter field majors of freshman, junior, sophomore and senior teaching candidates. In order to determine whether sophomore and senior

teaching candidates were more alike in attitudes than were freshmen or juniors, analyses of variance were performed on each of the three groups. Only the sub-sample comprising the three largest subject matter field majors was used (N=1250). Table XXXVIII presents the results of these analyses. It is evident from the table that subject matter field groups of freshmen differ significantly on three variables, namely TI, TO and Es. It is evident too that both juniors, and sophomores and seniors differ on these same variables. In addition, subject matter field groups of both juniors, and sophomores and seniors differ on LEPA. This evidence too supports rejection of Hypothesis 5.3. Not only is there no apparent decrease in variability, but instead some evidence of an increase as freshmen, juniors, sophomores and seniors are considered.

Discussion. The results presented in this section revealed that for the entire sample of prospective teachers, for the male and for the female samples, and for the three largest subject matter field groups, there appeared to be no significant change in the variability of attitudes as freshmen, juniors, sophomores and seniors were considered. Contemplation on this finding and the earlier reported finding that seniors in the present sample reflected the attitudes of experienced teachers more than they reflected the attitudes of freshmen, leads one to speculate that although attitudes appeared to change as students progressed from freshman to senior year, the change was not in the direction of increasing similarity within the group. That is, prospective teachers appeared in time to adopt the perspective

TABLE XXXVIII

BASIC DATA FOR THE TESTS OF DIFFERENCES IN ATTITUDES BETWEEN SUBJECT
MATTER FIELD MAJORS

		OPI Attitude Scales ^a						
		TI	SI	TO	Es	EPAQ	LEPA	
	N	Mean	Mean	Mean	Mean	Mean	N	Mean
<u>First Year</u>								
English-Fine Arts	130	53.2	52.2	46.2	58.0	47.0	120	49.2
Soc.Studies-								
French,Foreign Lang.	240	48.6	51.3	45.8	49.6	46.6	224	49.7
Math.-Science	219	45.5	52.3	55.8	42.9	44.9	205	51.6
Total	589	48.5	51.9	49.6	49.0	46.0	549	50.3
<u>F</u> ratio		12.6	0.25	37.9	55.7	1.36		1.38
Significance		.001	NS	.001	.001	NS		NS
<u>Second Year</u>								
English-Fine Arts	91	53.7	51.1	45.4	62.9	50.6	89	46.6
Soc.Studies-								
French,Foreign Lang.	188	49.4	47.8	45.1	51.8	51.1	169	46.9
Math.-Science	142	46.0	48.7	55.4	41.7	48.2	138	53.0
Total	421	49.2	48.8	48.6	50.8	50.0	396	48.9
<u>F</u> ratio		8.04	4.57	23.7	68.6	1.87		8.66
Significance		.001	NS	.001	.001	NS		.001
<u>Third-Fourth Years</u>								
English-Fine Arts	57	58.5	46.6	49.6	64.5	53.1	53	50.9
Soc.Studies-								
French,Foreign Lang.	96	52.4	49.0	47.7	51.8	54.2	94	50.0
Math.-Science	87	47.8	48.8	56.6	41.9	53.6	82	56.7
Total	240	52.2	48.4	51.4	51.2	53.7	229	52.6
<u>F</u> ratio		8.39	0.49	9.28	44.1	0.13		5.27
Significance		.001	NS	.001	.001	NS		.006

^aOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration.

of experienced teachers but did not become more alike in attitudes.

The above could be explained in terms of reference group processes. It is probable that prospective teachers are not all responding to the same reference group; hence their attitudes vary. It is possible that there is lack of consensus even among practicing teachers with respect to attitudes related to professional organization policy. It may also be that reference groups outside the profession continue to exert greater influence on some teaching candidates or sub-groups of teaching candidates. In all of the above cases the attitudes of seniors would tend to be no more alike than the attitudes of freshmen.

These speculations are suggestive of further research into attitudes of practicing teachers and the degree to which practicing teachers concur on individual items of policy, taking into account possible reference groups they may be responding to. Such analysis could lead to the development of a scale that measures professional attitudes typical of teachers as an occupational group, a scale which would facilitate research in this area and which might have pertinence to teacher selection.

IV. SUMMARY AND CONCLUSION

In this chapter a cross-sectional approach was employed in testing for attitude change among prospective teachers. Three sub-hypotheses were tested.

The first of these that prospective teachers classified by

anticipated length of preparation program differ significantly in attitudes was substantially supported. For the sample as a whole, and for those in their final year, four variables indicated differences in means significant beyond the .001 level of confidence between groups anticipating two, three and four or more years of pre-service education. These variables were Thinking Introversion, Theoretical Orientation, Education Profession Attitude Questionnaire and Level of Education Profession Aspiration. Only Estheticism and Social Introversion means did not differ significantly. When freshmen alone were considered, means were significantly different on TI, TO, and LEPA. In addition, in all cases of significant difference, three-year means fell between those of the other two groups.

Hypothesis 5.2 tested for the presence of attitude differences between freshman, junior, sophomore and senior years. For the sample as a whole, three of the F ratios were significant beyond the .001 level of confidence, a fourth was significant beyond the .005 level and a fifth beyond the .025 level. Estheticism means alone showed no significant differences. When the analysis was confined to the sample anticipating four years of pre-service preparation results revealed that succeeding years scored higher Thinking Introversion and Education Profession Attitude Questionnaire means and lower Social Introversion means. Males were found to differ significantly on TI and EPAQ; females on SI and EPAQ. The evidence indicated that Hypothesis 5.2 is supported in part.

Hypothesis 5.3 that variability from mean attitude scale scores decreases with increased length of preparation was tested in

two different ways. In both cases the evidence presented supported rejection of the hypothesis. There was either no change in variance or in some instances variability increased.

In general the evidence presented under three sub-hypotheses in this chapter supported Hypothesis 5 that Education freshmen, juniors, sophomores and seniors differ in attitudes. Significant differences were found in means but not in variances.

CHAPTER VIII

ANALYSIS AND RESULTS: DIFFERENCES BETWEEN TEACHING CANDIDATES IN TWO ALTERNATE TEACHER PREPARATION PROGRAMS

Whereas Chapter VI was concerned with testing hypotheses that Education students classified by social category, teaching membership group, academic achievement, and category of Education positions aspired to differed in attitudes, and Chapter VII with the discovery of attitude differences between freshman, junior, sophomore and senior teaching candidates, the present chapter focuses on the hypothesis that there are attitude differences between prospective teachers in two alternate programs of teacher preparation. Hypothesis 6 is stated in full below. Following the statement of the hypothesis, it is submitted to the test of empirical evidence gathered on fourth-year Education students in the two alternate programs, namely, (1) Education students in their fourth year of a Bachelor of Education program, and (2) students who first earned degrees in other faculties and then enrolled in a teacher preparation program for degree holders.

I. ATTITUDE DIFFERENCES BETWEEN SENIORS IN TWO TEACHER PREPARATION PROGRAMS

In the test of Hypothesis 6, measures on the six variables employed in the preceeding two chapters were utilized. The results of the analyses of evidence gathered in the present study are presented below.

Hypothesis 6: Prospective teachers completing a four-year program of teacher preparation in the Faculty of Education differ significantly in attitudes from prospective teachers who choose first to earn a degree in another faculty.

Results. Table XXXIX presents the results of tests of significance on the six pairs of ESAI group means. Degree holders scored higher beyond the .01 level of significance on preference for using the scientific method in thinking and interest in scientific activity (TO). They also scored higher on Social Introversion (SI) indicating that they withdraw more than do Education seniors from social contacts and responsibilities. In other words, Education seniors reported greater interest in people and in seeking social contacts and gaining satisfaction from them, than did degree holders. Education seniors scored significantly higher, beyond the .001 level of confidence, on EPAQ indicating that they concurred with the expressed policy of the professional organization more than did degree holders.

Discussion and further analysis Inasmuch as TO appears highly related to sex (supra, Table XV, p. 118), the analyses on this variable were repeated for the male and for the female samples separately. The results of these analyses revealed that the means of female Education seniors (N = 59; mean = 47.2) remained lower ($t = 2.19$; significance = .03) than those of female degree holders (N = 66; mean = 52.7). For the male sample however, Education senior means (N = 59; mean = 57.1) did not differ significantly ($t = .97$) from those of degree holders (N = 92; mean = 59.5). This evidence suggests that the female degree holder was significantly different from her Education senior

TABLE XXXIX

BASIC DATA FOR THE TESTS OF ATTITUDE DIFFERENCES BETWEEN EDUCATION SENIORS IN TWO ALTERNATE PROGRAMS^a

	OPI Attitude Scales ^b													
	TI		SI		TO		Es		EPAQ		LEPA			
	N	Mean	S ²	Mean	S ²	Mean	S ²	Mean	S	Mean	S ²	N	Mean	S ²
Fourth year Education undergraduates	118	55.7	232	46.5	242	52.1	227	51.3	250	55.9	269	113	53.3	216
Graduates from other faculties taking Education	159	56.6	180	52.4	251	56.7	223	48.3	221	49.9	181	147	53.3	171
Total	277	56.2	201	49.9	247	54.7	225	49.6	233	52.5	218	260	53.3	190
t		.523	-	3.09		2.48		1.61		3.30			.024	
Significance		NS		.002		.01		NS		.001			NS	

^aSample comprises teaching candidates only.

^bOPI: Omnibus Personality Inventory; TI: Thinking Introversion; SI: Social Introversion; TO: Theoretical Orientation; Es: Estheticism; EPAQ: Education Profession Attitude Questionnaire; LEPA: Level of Education Profession Aspiration.

counterpart on interest in science and scientific activities whereas the male degree holder was more like his male counterpart.

It will be recalled that Theoretical Orientation scores of Education students anticipating four or more years of pre-service preparation showed no significant change as Education freshmen, juniors, sophomores, and seniors were considered (supra, Table XXXIV, p. 163). Since the TO means of Education seniors (52.1) are similar to those of Education freshmen (52.8), it is highly unlikely that the influence of an Education reference group is responsible for the differences between Education senior TO means (52.1) and the degree holder TO mean (56.7). It will be remembered too that this is the one OPI scale on which the present Education student sample scored lower means than did the normative sample of 2,390 college students (supra, p. 96). The degree holders were--as might be expected--much like the all-college group on TO scores (means 56.7 and 55.9, respectively). This may be an attitude dimension that discriminates between Education students and university students in general, especially in the case of the female student.

Social Introversion scores of Education undergraduates showed no significant male-female differences (supra, Table XIV, p. 116). Consequently, it would appear that the resulting SI differences are not attributable to differing proportions of males and females in the two groups. However, Social Introversion appeared to be significantly related to age (supra, Table XVIII, p. 122). When the analysis was repeated for the largest homogeneous age group--ranging in age from nineteen to twenty-one years--Education seniors (N = 76; mean = 45.6)

again scored significantly lower means ($t = 2.40$; significance = .02) than did the degree holders ($N = 48$; mean = 52.2). This suggests that the difference was not merely a result of differences in maturity between the two groups.

It will be recalled too that Social Introversion scores decreased in a fairly orderly pattern as Education freshmen, juniors, sophomores, and seniors were considered (supra, Table XXXIV, p. 163). Degree holder SI scores (mean = 52.4) were similar to Education freshmen SI scores (51.3). It seems probable that reference group processes are at work influencing the social attitudes of prospective teachers. It appears equally probable that the reference group influencing these attitudes among Education undergraduates is an Education reference group. As indicated above, the mean score of Education seniors on this dimension was much lower than was that of Education freshmen.

Attitudes respecting professional policy bore some relationship to sex, especially in the case of the elementary teaching candidates (supra, Table XV, p. 118). It was thought desirable to repeat the analysis on EPAQ scores treating males and females separately. This analysis revealed that male Education seniors ($N = 59$; mean = 57.1) scored significantly higher EPAQ means ($t = 2.91$; significance = .005) than did male degree holders ($N = 92$; mean = 49.7). Male degree holders held attitudes respecting professional policy similar to those held by freshman Education undergraduates (supra, Table XXXV, p. 165). Means of male Education seniors were more like those of experienced teachers in regard to EPAQ scores (supra, Table XXVI, p. 141). On

the other hand, means of female Education seniors ($N = 59$; mean = 54.7) were not significantly higher than those of female degree holders ($N = 66$; mean = 50.1). This appears to indicate that male Education undergraduates were more responsive to a reference group influencing the attitudes measured by EPAQ than were female Education undergraduates, so that as a result male Education seniors differed significantly from male degree holders.

Assuming that similarity in attitudes is an integrative force and difference a divisive force, suggests that male novices from the two alternate programs will be less compatible than will their female counterparts in respect of professional policy (EPAQ). In addition, assuming attitudes of both groups will not have changed appreciably between the time the questionnaire was written and Education students first commenced teaching, suggests other possible consequences. Male and female degree holders, differing significantly in EPAQ attitudes from experienced teachers, may experience greater adjustment problems than Education seniors, when both groups are inducted into the profession.

Other implications are suggested by differences in EPAQ and SI scores. Since degree holders were more like Education freshmen in both these areas the resulting differences were probably not merely a result of increasing maturity or of selection and attrition. Pending further research on the attitudes of novices among practicing teachers and longitudinal studies these conclusions are of course highly tenuous and at most probably suggestive of hypotheses for study.

It is noteworthy that in a number of areas, for example the attitudes measured by Thinking Introversion (TI), Estheticism (Es) and the Education Profession Aspiration Scale (LEPA) no significant differences between groups were evident. This too suggests that there may be among prospective teachers a common core of attitudes typical of a prospective teacher group regardless of the preparation program elected.

II. SUMMARY AND CONCLUSION

In the present chapter, Hypothesis 6 that prospective teachers completing alternate programs of teacher education differ significantly in attitudes was tested. Degree holders scored higher means significant beyond the .01 level of confidence on Social Introversion (SI) and Theoretical Orientation (TO). Education seniors scored higher means significant beyond the .001 level on attitude toward the expressed policy of the professional organization (EPAQ). When males and females were treated separately on EPAQ and TO, results indicated that EPAQ discriminated for males but not for females whereas the reverse was true for TO. When the test was repeated for a homogeneous age group in respect of SI, Education seniors scored lower means significant beyond the .02 level of confidence than did degree holders. The primary and secondary analyses suggest that the hypothesis is acceptable only in part. Three variables, namely, TI, Es and LEPA showed no significant differences between the two groups of seniors.

CHAPTER IX

SUMMARY, CONCLUSIONS AND IMPLICATIONS

I. SUMMARY OF THE STUDY

The Problem

This study was designed to investigate attitude differences among Education students at various stages of their teacher education program and to account for these differences. Existing research suggested six sub-problems worthy of examination which in the light of a theory of attitude formation and change were stated in the form of research hypotheses. Hypotheses 1, 2, 3, and 4 were principally concerned with the study's effort to identify attitude differences between sub-groups that were thought actual or possible reference groups for prospective teachers. These hypotheses were: (1) that Education students classified by social category differ in attitudes; (2) that membership groups of Education students differ in attitudes; (3) that Education students classified by academic proficiency differ in attitudes; and (4) that Education students classified by category of Education positions aspired to differ significantly in attitudes.

Hypothesis 5 was concerned primarily with discovering what attitude changes result from exposure to the influences surrounding a teacher preparation program. The hypothesis was: (5) that Education freshmen, juniors, sophomores and seniors differ in attitudes.

The problem in Hypothesis 6 was to investigate attitude differences between teaching candidates in two alternate programs of teacher

preparation. This hypothesis was: (6) that prospective teachers completing a four-year program of teacher preparation in the Faculty of Education differ significantly in attitudes from prospective teachers who choose first to earn a degree in another faculty.

Instrumentation and Methodology

In order to secure the information needed to test the six hypotheses, several instruments were administered to the sample in a battery called the Education Student Attitude Inventory (ESAI.) ESAI consisted of the following: (1) the General Information Questionnaire which solicited information needed to classify Education students for hypotheses testing; (2) four attitude scales from the Omnibus Personality Inventory, namely, (a) Thinking Introversion (TI) which measures interest in a wide variety of areas and preference for reflective thought, (b) Social Introversion (SI) which assesses degree of interest in people and attitude toward making and deriving satisfaction from social contacts, (c) Theoretical Orientation (TO) which assesses interest in scientific activity and preference for using the scientific method in thinking, and (d) Estheticism (Es) which measures interest in artistic matters and activities; and (3) two scales developed specifically for the present study. These were: (a) the Education Profession Aspiration Scale (EPAS) which produces for each respondent an index based on his level of occupational aspiration within the Education profession (LEPA), and (b) the Education Profession Attitude Questionnaire (EPAQ) which measures degree of concurrence with expressed policy statements of the Alberta Teachers' Association.

Scores on the six attitude scales, namely TI, SI, TO, Es, EPAQ, and EPAS were the data against which other variables of the study were tested by means of t-tests and F ratios.

The Sample

The major sample of the study consisted of 1,983 Education students registered in the undergraduate teacher preparation program at the University of Alberta, Edmonton. This sample, representing 79.2 per cent of the 2,504 students registered in the Faculty of Education for the 1964-1965 session, consisted of two sub-samples. one group, the main focus of this study, consisted of prospective teachers (N = 1780). The other group comprised experienced teachers who had returned to university to further their academic education (N = 203).

In addition to the major sample, four classes of Education seniors (N = 149) and a number of graduate Education students (N = 42) enrolled in the 1963-1964 winter session served as a minor sample. The questionnaire administered to this sample late in the 1964 spring term provided the data necessary for constructing the Education Profession Prestige Scale and the Education Profession Aspiration Scale.

Results

In order to discover whether selected social categories, membership groups and non-membership groups acted as reference groups for Education students, hypotheses founded on these conditions of personal status were tested. Results of tests of significance revealed the following:

Hypothesis 1 that there are attitude differences between Education students classified by social category was at least partly supported by the evidence presented above. The social category sex was found to discriminate on four of the six variables for elementary and secondary curriculum majors combined, on five when elementary curriculum majors alone were considered, and on three when secondary curriculum majors were considered. Five of the six variables were found to discriminate between social categories based on age and four were found to discriminate in part between socio-economic levels. Findings with respect to marital status were inconclusive.

Hypothesis 2 that Education students classified by membership group differ in attitudes was substantially supported. Subject matter fields of concentration and prospective teacher--experienced teacher membership groups were most meaningful in terms of significant differences in attitudes. Curriculum major appeared to yield significant attitude differences for females only.

There was only partial support for Hypothesis 3 that prospective teachers classified by academic proficiency differ in attitudes. Of the three significant F ratios only Thinking Introversion revealed progressive increase in means as academic achievement increased. Additional analyses revealed that for females but not for males there was a progressive increase in level of aspiration means and a significant F ratio on this variable (LEPA).

Three of the five variables used in testing Hypothesis 4 that Education students classified by category of Education positions aspired to differ significantly in attitudes discriminated between

categories. Two F ratios were significant at the .001 level of confidence, a third at the .05 level. Hypothesis 4 was substantially supported.

A cross-sectional approach was employed to determine differences in attitudes between Education freshmen, juniors, sophomores and seniors. For the entire sample five of the F ratios calculated on means were significant, three beyond the .001 level of confidence, a fourth was significant at the .005 level and a fifth at the .025 level. Only Estheticism means showed no significant difference between years. There was no significant change in variances between years. On the basis of attitude differences between freshmen anticipating two, three and four years of pre-service education, the analysis was repeated for the sample anticipating four years of pre-service education. Succeeding years scored higher Thinking Introversion and Education Profession Attitude Questionnaire means and lower Social Introversion means. Males were found to differ significantly on Thinking Introversion and Education Profession Attitude Questionnaire means, females on Social Introversion and Education Profession Attitude Questionnaire means. There were again no significant differences in variances. Hypothesis 5 that Education freshmen, juniors, sophomores and seniors differ in attitudes was thus supported only in part and the support lay essentially in the differences in means.

Hypothesis 6 that prospective teachers completing alternate programs of teacher education differ in attitudes was similarly supported only in part. Three variables, Social Introversion (SI), Theoretical Orientation (TO) and Education Profession Attitude

Questionnaire discriminated between degree holders and Education seniors. Degree holders scored higher means, significant beyond the .01 level of confidence, on SI and TO. Education seniors scored higher means significant beyond the .001 level on EPAQ. When males and females were treated separately on EPAQ and TO, results indicated that EPAQ discriminated for males but not for females whereas TO discriminated for females but not for males.

In summary, evidence presented in this study for the six hypotheses under investigation indicates that two hypotheses were substantially supported and the remaining four were supported in part. The study showed rather convincingly that there are significant attitude differences between Education students classified according to social categories, according to conditions of personal status based on preparation program and teaching experience and according to non-membership group aspired to.

II. CONCLUSIONS

The conclusions presented here were arrived at on the basis of evidence from the present study. They are highly tentative in that they are subject to all the limitations that characterize research of this type. It must be recognized that the samples, especially the experienced teacher sample, may not have been representative samples. It must also be recognized that some of the classifications, notably subjective socio-economic status, subjective report of academic achievement, and election of a curriculum major while in the first year of teacher preparation may not be valid. The assumptions that

underlie a cross-sectional approach to research and the limitations of such research must also be recognized. Consequently, the conclusions presented might more properly form hypotheses for future longitudinal studies.

1. Of the four social categories under investigation the most meaningful in terms of significant differences appears to be the one based on sex of respondent. Since length of time spent in pre-service preparation program is significantly related to both age and marital status, the effects of these last two variables taken alone are difficult to assess. It may be that all three are mutually sustaining but this has not been conclusively demonstrated in the present study. In the case of socio-economic status, the attitude scales employed appeared to discriminate only between a small group of high subjective socio-economic level students on the one hand and the large group of average and low socio-economic level students on the other but did not discriminate between the low and average levels.

2. Although three classifications of membership groups related to teacher education program revealed significant differences in attitude scale means, the ones based on subject matter field of concentration and prospective teacher--experienced teacher classifications produced the most consistent differences. Curriculum major was less meaningful as F ratios were typically significant for females but not for males. A number of the subject matter fields showed few or no significant differences between them suggesting that combined classifications such as mathematics--biological science--physical science, English--fine arts, social studies--French and foreign

language are useful for research purposes.

3. Female elementary majors appear to be a group differing in many respects from the remainder of the prospective teacher body. Their mean scores are significantly lower than those of secondary females and than those of elementary and secondary males on interest in science and scientific activity (TO), on attitudes toward the expressed policy statements of the teachers' organization (EPAQ) and on liking for reflective thought and interest in a wide variety of areas (TI).

4. Occupational aspirations within the Education profession would seem to be higher for men than for women regardless of their self-reported level of academic ability. Men at any level of ability on the average indicated aspirations higher than women at the same or any other level. The aspiration levels of women were significantly related to self-reported academic achievement; no such relationship was evident for men.

5. Categories of education positions aspired to (classroom teaching, supervision of classroom teachers, administration, counselling, research, and services) appear to be meaningful classifications for research in that significant differences between them were found on three variables, namely Thinking Introversion, Theoretical Orientation and Estheticism. Aspirants to administrative positions differed significantly from aspirants to teaching positions on all three of these but not on expressed attitude toward teacher organization policy. This suggests that whereas the category of positions aspired to appeared to act as a reference group for certain attitudes, it did not seem to act as a reference group in respect of professional

organization policy.

6. Teaching candidates in their final year of a two, three or four year program of pre-service preparation differed significantly in attitudes. Those remaining longer scored higher means on liking for reflective thought and interest in a wide variety of areas (TI), on interest in science and the use of the scientific method in thinking (TO), on level of occupational aspiration (LEPA), and on attitudes toward teacher organization policy (EPAQ). Freshmen anticipating two, three and four years of pre-service preparation differed on three of these but not on EPAQ.

7. The cross-sectional study revealed that length of pre-service preparation program and aspiration level appear to be positively related. Those anticipating more years of pre-service education and those actually in senior years express higher levels of aspiration than others. Cross-sectional comparisons between freshmen, juniors, sophomores and seniors reveal also that number of years spent in teacher education is positively related to concurrence with the expressed policy of the teacher organization, and to liking for reflective thought and interest in a wide variety of areas in preference to interest in knowledge that has immediate practical application. This is especially true for the male sample. Number of years spent in pre-service education is also related to attitude respecting desire to relate to and to be helpful to others, particularly in the case of females.

8. Tests of significance between mean scores of prospective teachers in two alternate programs of teacher preparation in the

comparative study suggest that differences between freshmen and seniors in the four year Bachelor of Education program of teacher education are not merely a result of increasing maturity. When the attitudes of the two groups of candidates in their final year of the alternate programs of teacher preparation were compared with freshmen attitudes and with experienced teacher attitudes, degree holders were found to be more like Education freshmen whereas Education seniors were more like experienced teachers. Degree holders resembled freshmen Education undergraduates in reported interest in seeking and gaining satisfaction from social contacts (SI). Education seniors' scores reflected a greater desire to relate to and to be helpful to others, thus resembling those of experienced teachers in this respect. Degree holders were likewise similar to Education freshmen in professed attitude toward the policy of the professional organization (EPAQ). The scores of Education seniors were on the average higher on this dimension and again were more like those of experienced teachers.

On the other hand, Education seniors were not significantly different from freshmen in respect of expressed interest in science and scientific activities (TO), whereas degree holders scoring significantly higher on this variable reflected the attitudes of the all university sample on which norms for the instrument were established.

III. IMPLICATIONS

The findings of this study would seem to have a number of implications for teacher education and the Education profession. They also suggest a need for further research.

Implications for Teacher Education and the Education Profession

With the help of tools provided by an existing behavioral science theory the present study examined the attitudes of prospective teachers classified according to various criteria. A number of relationships were suggested by the evidence. Several of these are thought to have implications for teacher education and the teaching profession.

The apparent positive relationship between number of years of preparation and level of occupational aspiration among prospective teachers would seem to have implications for those concerned with planning the teacher preparation program. In particular, since it seems that candidates with more years of teacher education aspire to positions ranking higher on the Education Profession Prestige Scale, the consequence of lengthening the minimum program of teacher education would seem to be the creation of teacher shortages in some areas and teacher surpluses in others. The present study indicates that secondary school, junior college and university positions rate higher than corresponding nursery, kindergarten and elementary school positions; that city and town positions rate higher than corresponding rural and village positions, that non-teaching positions (research, supervision of classroom teachers, administration) rate higher than teaching positions and that academic subject teaching positions rate higher than vocational subject teaching positions. Since the study indicates as well that teaching candidates who had or anticipate more years of pre-service education aspire to Education positions higher on the scale, it would seem that they have chosen certain positions, for example city, academic and secondary positions in preference to others,

for example, village, vocational and elementary positions. Increasing the length of the pre-service preparation program may have an unanticipated effect such as creating a surplus among teachers electing the former positions and a shortage among those seeking the latter.

Lengthening the minimum pre-service preparation program may have another somewhat paradoxical consequence. Individuals prepared for a particular speciality within the profession--say elementary reading--may elect to teach in the secondary school. This suggests that those involved in planning longer programs should weigh carefully the advantages of a highly specialized as compared to a general program of preparation for teachers.

The evidence that female elementary majors differ in attitudes from the other teaching candidates may have implications for the professional organization and indirectly for professional solidarity. If female elementary teachers see themselves as a group whose interests and needs are different from those of other teachers, this difference may be a source of conflict between the two groups in relation to professional goals and policy. Attitude differences between the two groups may have implications for the status of teaching as a profession, as a multiplicity of professions, or as a multiplicity of quasi-professions.

The comparative study revealed that those who spend less time in the professional preparation program--whatever the length of time spent at university--score lower on desire to relate and be helpful to people and in attitude toward professional organization policy. In

general, the more time spent in professional preparation the greater the orientation in the direction of experienced teacher attitudes. Since teacher effectiveness was not directly a concern of the present study, it remains for future research to determine whether this orientation is desirable, from that standpoint. From the standpoint of the school administrator it is probably desirable that the novice reflect the attitudes of experienced teachers thus easing his transition from candidate to practitioner. In any case, practicing administrators should be cognizant of probable attitude differences between novice and experienced teacher, between two and four year candidates and between those who had elected alternate programs of teacher preparation.

In addition to attitude differences related to type and length of preparation the present study also revealed that subject matter field group, sex differences and to a somewhat lesser degree curriculum major differences and differences in socio-economic and academic background are sources of attitude differences among teaching candidates. If the administrator is aware of these possible sources of disagreement, he might more readily understand and cope with conflict between faculty members should this arise.

An implication for the teacher preparation program may result if orientation toward attitudes held by experienced teachers is thought desirable. It may be advisable to provide greater opportunity for teaching candidates who remain for a shorter time in the Faculty of Education to interact more closely with practicing teachers during this period so that induction into the profession is facilitated.

Implications for Further Research

1. The differences which have been shown to exist between teaching candidates classified by social category, especially sex, and by membership group relating to teacher education program, particularly subject matter field of concentration, support the contention of researchers such as Strong, and Getzels and Jackson (supra, p. 50), that it is a more useful approach to teacher education research to investigate differences between groups of teachers or prospective teachers than to attempt to draw generalizations which pertain to all prospective or practicing teachers.

2. The Education Profession Attitude Questionnaire (EPAQ) appears to be a valid instrument in that it discriminated meaningfully between experienced teachers and prospective teachers. Scores of the former yielded significantly higher means on EPAQ than did those of the latter. It is probable that certain experienced teacher sub-groups would not concur with professional organization policy to the extent indicated by the scores in the present study. Certain sub-groups may not respond in the same way to individual EPAQ items; that is, EPAQ may be multi-dimensional. This possibility suggests an item analysis on EPAQ. From this analysis or a factor analysis of items--and an additional pool of items, if necessary--a number of uni-dimensional scales might be constructed. If there is indeed--as suggested by the present study--a body of shared professional attitudes among teachers, a scale that measures the degree of concurrence with these attitudes would seem to have relevance to teacher satisfaction and teacher recruitment research.

3. The Education Profession Aspiration Scale developed for the present study appeared to discriminate meaningfully in that groups aspiring to secondary positions (which rate higher on the Education Profession Prestige Scale) scored higher levels of aspiration (LEPA) than did those aspiring to elementary positions (which rate lower on EPPS); males, more often aspiring to secondary, supervisory and administrative positions, scored higher levels of aspiration than did females; similarly, those anticipating more pre-service preparation scored higher levels of aspiration than did the others. Whether the aspirations of males and females change in the manner and direction indicated by the cross-sectional study and what implications the apparent male-female differences have for recruitment into and especially for satisfaction in the profession was not conclusively answered in the present study. It is possible, for example, that promotion policies for teachers which reflect the cultural male-female differences with respect to administrative or supervisory positions and limit promotional opportunities for women in Education may be a source of resentment and frustration for them. The whole question of aspiration within the profession appears worthy of further research.

4. Differences noted between attitudes of teaching candidates aspiring to various categories of Education positions appear to indicate that long before induction into their chosen profession, prospective teachers aspiring to certain positions have acquired attitudes different from those of other candidates aspiring to other positions. This suggests the feasibility of assessing degree of

anticipatory socialization to or readiness for the chosen position.

5. Results in the comparative part of the present study indicated significant differences between means of prospective teachers tested during the first term of their final year of pre-service education. There is no assurance that the attitudes measured will not change appreciably--particularly in the case of degree holders--before induction into the profession. Secondly, the experienced teacher sample comprised a group of experienced teachers who were returning to university to further their academic education. There was no way of determining to what extent this group reflected the attitudes of the whole body of practicing teachers. It would seem desirable therefore to replicate the present study using as samples similar groups of prospective teachers who are at the point of being inducted into the profession, and a representative sample of experienced Alberta teachers.

6. The cross-sectional part of the present study indicates differences between the means of freshmen, juniors, sophomores and senior students. This finding appears to suggest that attitude change is occurring so that the teaching candidate who leaves after four years of teacher education holds attitudes different from those held as a freshman. However, in recognition of the weaknesses which underlie a cross-sectional survey, this conclusion is highly tenuous and requires confirmation or rejection by evidence from a longitudinal study. The present study might usefully provide base-line data for such a study.

1. *Journal of the American Medical Association*, 144: 1000-1001, 1950.

2. *Journal of the American Medical Association*, 144: 1001-1002, 1950.

3. *Journal of the American Medical Association*, 144: 1002-1003, 1950.

4. *Journal of the American Medical Association*, 144: 1003-1004, 1950.

5. *Journal of the American Medical Association*, 144: 1004-1005, 1950.

6. *Journal of the American Medical Association*, 144: 1005-1006, 1950.

BIBLIOGRAPHY

7. *Journal of the American Medical Association*, 144: 1006-1007, 1950.

8. *Journal of the American Medical Association*, 144: 1007-1008, 1950.

9. *Journal of the American Medical Association*, 144: 1008-1009, 1950.

10. *Journal of the American Medical Association*, 144: 1009-1010, 1950.

11. *Journal of the American Medical Association*, 144: 1010-1011, 1950.

12. *Journal of the American Medical Association*, 144: 1011-1012, 1950.

13. *Journal of the American Medical Association*, 144: 1012-1013, 1950.

14. *Journal of the American Medical Association*, 144: 1013-1014, 1950.

BIBLIOGRAPHY

A. BOOKS

- Caplow, Theodore. The Sociology of Work. Minneapolis: University of Minnesota Press, 1954.
- Center for the Study of Higher Education. Omnibus Personality Inventory--Research Manual. Berkeley: University of California, 1962.
- Conant, James Bryant. The Education of American Teachers. New York: McGraw-Hill, 1963.
- Darley, John G., and Theda Hagenah. Vocational Interest Measurement: Theory and Practice. Minneapolis: University of Minnesota Press, 1955.
- Fisher, R. A. The Design of Experiments (7th ed.). New York: Hafner Publishing Co., Inc., 1960.
- Haller, Archibald O., and Irwin W. Miller. The Occupational Aspiration Scale: Theory, Structure and Correlates. Technical Bulletin Number 288. East Lansing, Michigan: State University, 1963.
- Jacob, Philipe. Changing Values in College: an Exploratory Study of the Impact of College Teaching. New York: Harper, 1957.
- Jensen, Gale E. Socio-Psychological Analysis of Education Problems. Ann Arbor, Michigan: Ann Arbor Publishers, 1957.
- Koerner, James D. The Miseducation of American Teachers. Boston: Houghton Mifflin, 1963.
- Krech, David, and Richard S. Crutchfield. Theory and Problems of Social Psychology. New York: McGraw-Hill Book Company, 1948.
- Lieberman, Myron, Education as a Profession. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1958.
- Merton, Robert K. Social Theory and Social Structure. Glencoe, Ill.: The Free Press, 1957.
- Neatby, Hilda. So Little for the Mind. Toronto: Clarke, Irwin, 1953.
- Newcomb, Theodore M. The Acquaintance Process. New York: Holt, Rinehart and Winston, 1961.

- _____. Personality and Social Change: Attitude Formation in a Student Community. New York: Dryden Press, 1943.
- _____. Social Psychology. New York: The Dryden Press, 1956.
- Nosow, Sigmund, and William H. Form. Man, Work, and Society. New York: Basic books, 1962.
- Rickover, Hyman. Education and Freedom. New York: E. P. Dutton & Co., 1959.
- Roe, Anne. The Psychology of Occupations. New York: Wiley, 1956.
- Rosenberg, Morris, Edward A. Suchman, and Rose K. Goldsen. Occupations and Values. Glencoe, Ill.: Free Press, 1957.
- Ryans, D. G. Characteristics of Teachers. Washington: American Council on Education, 1960.
- Sherif Muzafer, and Carolyn W. Sherif. An Outline of Social Psychology (revised ed.). New York: Harper and Row, 1956.
- Shibutani, Tamotsu. Society and Personality. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961.
- Strong, E. K., Jr. Vocational Interests of Men and Women. Stanford: Stanford University Press, 1943.
- Thurstone, L. L. The Measurement of Values. Chicago: The University of Chicago Press, 1959.
- Torgerson, Warren S. Theory and Methods of Scaling. New York: John Wiley and Sons, Inc., 1958.
- Whyte, William Foote. Men At Work. Homewood Ill.: Dorsey Press, 1961.

B. PUBLICATIONS OF THE GOVERNMENT, LEARNED SOCIETIES, AND OTHER ORGANIZATIONS

- Alberta Teachers' Association Policy Handbook. Edmonton: Alberta Teachers' Association, 1964.
- Maccia, Elizabeth Steiner. Educational Theory Models: A Possible Way to Stretch the Bounds of Teacher Education Research. Occasional Paper 64-162. Columbus, Ohio: Educational Theory Center, The Ohio State University, 1964.
- Report of the Royal Commission on Education in Alberta. Edmonton: Queen's Printer, 1959.

C. PERIODICALS

- Barr, A. S. "The Measurement and Prediction of Teaching Efficiency: A Summary of Investigations," The Journal of Experimental Education, 16:203-283, June, 1948.
- Benoit-Smullyan, Emile. "Status, Status Types and Status Interrelations," American Sociological Review, 9:151-161, April, 1944.
- Blum, Lawrence Philip. "A Comparative Study of Students Preparing for Five Selected Professions, Including Teaching," Journal of Experimental Education, 16:31-65, September, 1947.
- Coe, Rodney M. "Self-Conception and Professional Training," Nursing Research, 14:49-52, Winter, 1965.
- Cook, W. W., N. C. Kearney, P. D. Rocchio, and A. Thompson. "Significant Factors in Teachers' Classroom Attitudes," Journal of Teacher Education, 7:274-279, September, 1956.
- Counts, George C. "The Social Status of Occupations: A Problem in Vocational Guidance," School Review, 33:16-27, January, 1925.
- Coutts, H. T. "The Future of the Teaching Profession," The ATA Magazine, 42:6-12, 48,49, October, 1961.
- Davis, Fred, and Virginia Olesen. "Initiation into a Woman's Profession: Identity Problems in the Status Transition of Coed to Student Nurse," Sociometry, 26:89-101, March, 1963.
- Domas, S. J., and D. V. Tiedeman. "Teacher Competence: An Annotated Bibliography," Journal of Experimental Education, 19:101-218, December, 1950.
- Eron, Leonard D. "The Effect of Medical Education on Attitudes: A Follow-Up Study," Journal of Medical Education, 33:25-33, October, 1958.
- _____. "The Effect of Nursing Education on Attitudes," Nursing Research, 4:24-27, June, 1955.
- Guba, E. G., P. W. Jackson, and C. E. Bidwell. "Occupational Choice and the Teaching Career," Educational Research Bulletin, 38:1-12, January, 1959.
- Hartman, George W. "The Prestige of Occupations," The Personnel Journal, 13:144-152, October, 1934.

- Holland, John J. "Some Explorations of the Theory of Vocational Choice," Psychological Monographs: General and Applied, Whole No. 545, 1962, Vol. 76, No. 26, 49 pp.
- Hyman, Herbert Hiram. "The Psychology of Status," Archives of Psychology, No. 269, June, 1942, 94 pp.
- Jackson, Philip W., and Egon G. Guba. "The Need Structure of In-Service Teachers: An Occupational Analysis," School Review, 65:176-196, Summer, 1957.
- Kearney, N. C., and P. D. Rocchio. "The Effect of Teacher Education on the Teacher's Attitude," Journal of Educational Research, 49:703-708, May, 1956.
- Kennedy, Kathleen, D. B. Black, and S. C. T. Clarke, "Positions in Education," The ATA Magazine, 42:31-33, October, 1961.
- MacLean, Malcolm S., May Seagoe Gowan, and John C. Gowan, "A Teacher Selection and Counselling Service," The Journal of Educational Research, 38:669-677, May, 1955.
- Miller, Louise B., and Edmont F. Erwin. "Attitude Changes in Medical Students During a Comprehensive Care Program," Journal of Medical Education, 36:422-428, May, 1961.
- _____. "A Study of Attitudes and Anxiety in Medical Students," The Journal of Medical Education, 34:1089-1092, November, 1959.
- Richey, Robert W., William H. Fox, and Charles E. Fauset. "Prestige Ranks of Teaching," Occupations, 13:144-152, October, 1934.
- Roper, E. "Classifying Respondents by Economic Status," Public Opinion Quarterly, 4:270-272, Winter, 1940.
- Rosinski, Edwin F. "Professional, Ethical and Intellectual Attitudes of Medical Students," Journal of Medical Education, 38:1016-1022, December, 1963.
- Warner, W. Lloyd. "Social Anthropology and the Modern Community," The American Journal of Sociology, 46:785-796, May, 1941.

D. ARTICLES IN COLLECTIONS

- Charters, W. W. Jr. "The Social Background of Teaching," Handbook of Research on Teaching, N. L. Gage, editor. Chicago: Rand McNally & Co., 1963, 715-813.

- Getzels, Jacob W. "Theory and Practice in Educational Administration: An Old Question Revisited," Roald F. Campbell and James M. Lipham, editors. Administrative Theory as a Guide to Action. Chicago: University of Chicago Press, 1960, 37-58.
- _____, and P. W. Jackson. "The Teacher's Personality and Characteristics," Handbook of Research on Teaching, N. L. Gage, editor. Chicago: Rand McNally & Company, 1963, 506-582.
- Green, Bert F. "Attitude Measurement," Handbook of Social Psychology, Vol. I., Gardner Lindzey, editor. Cambridge, Mass.: Addison-Wesley Publishing Company, Inc., 1954, 335-369.
- Guba, Egon G. "Research in Internal Administration--What Do We Know?" Administrative Theory as a Guide to Action, Roald F. Campbell and James M. Lipham, editors. Chicago: University of Chicago Press, 1950, 113-130.
- Heist, Paul. "The Student," Education for the Professions: The Sixty-First Yearbook of the National Society for the Study of Education, Nelson B. Henry, editor. Chicago: The University of Chicago Press, 1962, 211-234.
- Huntington, Mary J. "The Development of a Professional Self-Image," Student Physician, Robert K. Merton, George Reader, and Patricia L. Kendall, editors. Cambridge, Mass.: Harvard University Press, 1957, 179-187.
- Jackson, Jay M. "Reference Group Processes in a Formal Organization," Group Dynamics Research and Theory, second edition. Dorwin Cartwright and Alvin Zander, editors. Evanston, Ill.: Row, Peterson and Company, 1960, 120-140.
- Kendall, Patricia L., and Hanan C. Selvin. "Tendencies Toward Specialization in Medical Training," The Student Physician, Robert K. Merton, George G. Reader, and Patricia L. Kendall, editors. Cambridge, Mass.: Harvard University Press, 1957, 153-174.
- Lewin, K. "Behavior and Development as a Function of the Total Situation," Field Theory in Social Science, D. Cartwright, editor. New York: Harper, 1951, 238-303.
- Murray, Henry A. "Toward a Classification of Interactions," Toward a General Theory of Action, T. Parsons and E. A. Shils, editors. Cambridge, Mass: Harvard University Press, 1962.
- National Opinion Research Center. "Jobs and Occupations: A Popular Evaluation," Class, Status and Power, Reinhard Bendix and Seymour Martin Lipset, editors. Glencoe, Ill.: The Free Press, 1953, 411-426.

Rogers, Everett M. and A. Eugene Havens. "Toward a Theory of the Diffusion and Adoption of Innovations," Diffusion of Innovations, E. M. Rogers, editor. New York: The Free Press of Glencoe, 1962, 300-316.

E. UNPUBLISHED MATERIALS

Andrews, John H. M. "Administrative Significance of Psychological Differences Between Secondary Teachers of Different Subject Matter Fields." Unpublished Doctoral Dissertation, University of Chicago, 1957.

von Fange, Erich Alvin. "Implications for School Administration of the Personality Structure of Educational Personnel." Unpublished Doctoral Dissertation, University of Alberta, Edmonton, 1961.

A P P E N D I C E S

Collection Method: All code has been

1000000

APPENDIX A

INSTRUMENTS

Education Student Attitude Inventory



This inventory is part of a study designed to compare selected attitudes of several groups of Education students. Part A requests personal background information. Parts B and C are attitude questions. Part D requests information on your aspirations within the Education profession.

All information will be coded on IBM cards. Data will be processed for **groups** of students. Complete anonymity is assured. In order to secure a high percentage of returns, it will be necessary to later contact those not present when questionnaires were distributed. Your name is requested **only** for purposes of identifying these persons.

The questionnaire takes about 45 minutes to complete. Work rapidly. First impulses are important. Thank you for your co-operation.

PART A

- | | |
|--|---|
| <p>1. Name
(surname) (given names)</p> <p>2. Age - CHECK ONE:
1. under 18
2. 18 or 19
3. 20 or 21 2
4. 22 to 25
5. over 25</p> <p>3. Sex and Marital Status - CHECK ONE:
1. Single male
2. Single female
3. Married male
4. Married female 3
5. Separated, divorced or widowed male
6. Separated, divorced, or widowed female</p> <p>4. Place of birth - CHECK ONE:
1. Alberta
2. Outside Alberta but in Canada 4
3. Outside Canada</p> <p>5. Completed Grade XII in - CHECK ONE:
1. Edmonton
2. Calgary
3. Another Alberta City
4. Alberta town
5. Alberta village 5
6. Alberta rural school
7. City or Town outside Alberta
8. Village or rural school outside Alberta</p> <p>6. How many years have you attended university?
CHECK ONE:
1. Beginning my first
2. Beginning my second
3. Beginning my third 6
4. Beginning my fourth
5. Beginning my fifth
6. More than five years</p> | <p>7. How many years have you spent in the Faculty of Education? - CHECK ONE:
1. Beginning my first
2. Beginning my second
3. Beginning my third 7
4. Beginning my fourth
5. More than four years</p> <p>8. What route are you in? - CHECK ONE:
(If you are in your first year, check the route you will be in next year).
1. Elementary
2. Secondary 8
3. Vocational</p> <p>9. What is (or will be) your major field of concentration?
CHECK ONE: (If you have more than one field, check the one you are most interested in.)
1. English
2. Foreign language
3. Social Studies
4. Mathematics
5. Biological sciences
6. Chemistry
7. Physics 9,
8. Fine Arts 10
9. Physical Education
10. Industrial Arts
11. Home Economics
12. Early childhood education
13. Libraries
14. Education of Exceptional children
15. Other (specify)</p> <p>10. How many university courses have you completed in your major field of concentration? CHECK ONE:
1. None
2. One course 11
3. 2-3 courses
4. 4-5 courses
5. 6 or more courses</p> |
|--|---|

11. What grade level are you most interested in teaching?
CHECK ONE:
1. Kindergarten
 2. Primary (1-3)
 3. Intermediate (4-6)
 4. Junior High (7-9) 12
 5. Senior High (10-12)
 6. Junior College
 7. University
 8. Other (specify)
12. What degree do you presently hold? CHECK ONE:
1. None
 2. B.A. (specify major): 13,
 3. B.Sc. (specify major) 14,
 4. Other (specify degree and major): 15
13. How much teaching experience have you had?
CHECK ONE:
1. None
 2. 1 year
 3. 2-4 years 16
 4. 5-7 years
 5. Over 7 years
14. Since high school, how many years have you spent away from school or university? (working, etc.)
CHECK ONE:
1. None
 2. 1 year
 3. 2-4 years 17
 4. 5-7 years
 5. Over 7 years
15. While at university, do you live
CHECK ONE:
1. With your parents? 18
 2. Away from your parents?
16. Your cumulative university average (or grade XII average if in your first year) is:
CHECK ONE:
1. under 55
 2. 55-59
 3. 60-64
 4. 65-69
 5. 70-74 19
 6. 75-79
 7. 80-84
 8. 85 and over
17. The size of your hometown is:
CHECK ONE:
1. Less than 1,000
 2. 1,000 - 5,000
 3. 5,000 - 25,000 20
 4. 25,000 - 200,000
 5. Over 200,000
18. Compared with your parents' socio-economic status, do you consider that your own socio-economic status as a teacher will be:
CHECK ONE:
1. Considerably lower
 2. Somewhat lower
 3. Same 21
 4. Somewhat higher
 5. Considerably higher
19. Compared with the families of other university students, do you consider the socio-economic level of your family to be:
CHECK ONE:
1. Considerably lower
 2. Somewhat lower
 3. Same 22
 4. Somewhat higher
 5. Considerably higher
20. The people you will associate with when a teacher will have:
CHECK ONE:
1. Considerably less education than your parents
 2. Somewhat less education than your parents
 3. About the same level of education as your parents 23
 4. Somewhat more education than your parents
 5. Considerably more education than your parents
21. The persons you presently associate with most (i.e., your friends) are mainly:
CHECK ONE:
1. Education students in the same major as you are in
 2. Education students but in another major
 3. Other university students 24
 4. Other Edmontonians
 5. People from your home town (other than Edmonton)
22. How much university training do you REALISTICALLY plan on having before you take your first teaching position? (If you have already taught, check the number you had before taking your first position.)
CHECK ONE:
1. 1 year
 2. 2 years
 3. 3 years 25
 4. 4 years
 5. 5 years
 6. More than 5 years

PART C

ATTITUDE INVENTORY II

DIRECTIONS: A number of controversial statements are given below. Indicate the degree of your personal agreement or disagreement with each statement by circling the appropriate number at the right.

CIRCLE 1—if you **agree strongly (AS)** with the statement.

CIRCLE 2—if you **agree somewhat (A)** with the statement.

CIRCLE 3—if you are **undecided (U)**.

CIRCLE 4—if you **disagree somewhat (D)** with the statement.

CIRCLE 5—if you **disagree strongly (DS)** with the statement.

	AS	A	U	D	DS	
1. Schools should be granted greater local autonomy in curriculum building	1	2	3	4	5	
2. Provincial teachers' associations should be able to discipline members for violating teacher ethics ..	1	2	3	4	5	/35
3. Curriculum guides issued by the Department of Education should specify methods to be used	1	2	3	4	5	
4. School boards should be elected specifically to manage and administer the schools of the area and should be fiscally independent of municipal authorities	1	2	3	4	5	
5. Increased federal aid for education should be provided	1	2	3	4	5	
6. The curriculum authority of the Department of Education should be limited to matters of course objectives and minimum content	1	2	3	4	5	
7. Provincial teachers' associations should be concerned with the competence of teachers	1	2	3	4	5	/40
8. Effective teaching can be done with more than twenty-five pupils per class	1	2	3	4	5	
9. The local teaching staff should be consulted at all stages of the planning and designing of school buildings	1	2	3	4	5	
10. Only those individuals who have teaching certificates should be appointed to the instructional staff of the Faculty of Education	1	2	3	4	5	
11. The Alberta Teachers' Association should do everything in its power to maintain the right to strike	1	2	3	4	5	
12. Teachers should accept as part of their responsibility the supervision of pupil deportment on school premises during noon intermission	1	2	3	4	5	/45
13. Selection of instructional methods should be a prerogative of teachers	1	2	3	4	5	
14. Teachers should be paid according to a provincial salary scale	1	2	3	4	5	
15. Provincial teachers' associations should have the right to recommend cancellation of a teacher's certificate	1	2	3	4	5	
16. Membership in the provincial teachers' association should be compulsory for all teachers	1	2	3	4	5	
17. Teachers should be paid on the basis of merit	1	2	3	4	5	/50
18. All teachers should be employed and paid by the provincial government	1	2	3	4	5	
19. Teachers should decide whether or not they participate in or sponsor any particular extracurricular activity	1	2	3	4	5	
20. Teachers should be compensated for time spent in curriculum writing	1	2	3	4	5	

Continue on to page 8

PART D

EDUCATION PROFESSION ASPIRATION SCALE

Of the **60** Educational positions listed below, select the **NUMBER** corresponding to the position that best answers each of the following questions and **write this number** in the blank provided. For convenience, the positions have been listed in eight categories.

- | | | |
|---|-----------|--------|
| (a) Which is the BEST position you are REALLY SURE YOU CAN GET when your schooling is over? | (a) | 54, 55 |
| (b) Which ONE would you choose if you were FREE TO CHOOSE ANY of them you wished when your schooling is over? | (b) | 56, 57 |
| (c) Which is the BEST ONE you are REALLY SURE YOU CAN HAVE ten years from now? | (c) | 58, 59 |
| (d) Which is the ONE you would choose to have ten years from now, if you were FREE TO HAVE ANY of them you wished? | (d) | 60, 61 |
| (e) Which is the BEST ONE you are CERTAIN you would be successful in, if you were given the opportunity of having it when YOUR SCHOOLING IS OVER? | (e) | 62, 63 |

A. PRESCHOOL (nursery and kindergarten positions)

1. Teacher
2. Supervision of nursery schools
3. Research worker in child growth and development
4. Director of a private nursery or kindergarten

B. ELEMENTARY SCHOOL POSITIONS

5. Teacher for separate or combined grades in a small town
6. Teacher for separate or combined grades in a city
7. Teacher of special subjects such as art, music, or physical education
8. Teacher of physically handicapped or mentally retarded
9. Co-operating teacher in a demonstration school
10. General or special supervisor
11. Assistant principal in a small town school
12. Assistant principal in a city
13. Principal, small town school
14. Principal, city school
15. Librarian
16. Child psychologist or counselor
17. Curriculum consultant

C. SECONDARY SCHOOL POSITIONS (Junior and Senior High)

18. Teacher of academic subject, small town school
19. Teacher of vocational subject, small town school
20. Teacher of academic subject, city school
21. Teacher of vocational subject, city school
22. Co-operating teacher in a demonstration school
23. Department head of a subject area
24. Assistant principal, small town school
25. Assistant principal, city school
26. Principal, small town school
27. Principal, city school
28. Supervisor of a subject area
29. Curriculum consultant
30. Athletic coach
31. Guidance director
32. Librarian

D. ADMINISTRATIVE AND SPECIAL SERVICES

33. Superintendent of a city system
34. Assistant superintendent of a city system
35. Business manager (supplies, purchasing, etc.)
36. Research director
37. Director of audio-visual materials, city school system
38. Director of public relations, city school system
39. School psychologist, city school system
40. Personnel director, city school system

E. JUNIOR COLLEGE POSITIONS

41. Teacher of subject field
42. Personnel director
43. President or dean
44. Registrar
45. Business manager

F. UNIVERSITY POSITIONS

46. Lecturer in any subject field offered in the Faculty of Education
47. Professor in a subject field in the Faculty of Education
48. Head of a department in the Faculty of Education
49. Assistant dean of Education
50. Dean of Education
51. President of a university

G. PROFESSIONAL ORGANIZATIONS (such as the Alberta Teachers' Association or the Canadian Teachers' Federation)

52. Staff office or field worker
53. Executive secretary
54. Research worker

H. PROVINCIAL DEPARTMENT OF EDUCATION

55. Superintendent of a school division or county
56. Inspector of high schools
57. Director of a Division within the Department (e.g., Director of Vocational Education)
58. Director of a Branch within a Departmental Division (e.g., Director of Guidance, Director of Curriculum)
59. Chief superintendent of schools
60. Deputy Minister of Education

Your co-operation in completing this inventory is much appreciated.

Completeness in answering all items is important. Would you please check to see that a response has been made to all items.

You are reminded that all answers given here are held in strict confidence and that after coding, all replies become completely anonymous and are used thereafter only for statistical analysis.

THANK YOU.

TABLE 1					
STATISTICAL DATA USED IN DEVELOPING THE EDUCATION PROFESSION PRESTIGE SCALE					
Profession	Mean	Standard Deviation	Range	Skewness	Kurtosis
1. Teacher	4.5	1.2	1-6	-.1	1.5
2. Doctor	5.2	1.1	1-6	.2	1.4
3. Lawyer	5.8	1.0	1-6	.3	1.3
4. Engineer	5.5	1.1	1-6	.1	1.6
5. Scientist	5.7	1.0	1-6	.2	1.4
6. Businessman	5.3	1.1	1-6	.1	1.5
7. Farmer	4.8	1.2	1-6	-.2	1.6
8. Miner	4.2	1.3	1-6	-.3	1.7
9. Fisherman	4.0	1.4	1-6	-.4	1.8
10. Unemployed	3.5	1.5	1-6	-.5	1.9

APPENDIX B

STATISTICAL DATA USED IN DEVELOPING THE EDUCATION PROFESSION PRESTIGE SCALE

Profession	Mean	Standard Deviation	Range	Skewness	Kurtosis
1. Teacher	4.5	1.2	1-6	-.1	1.5
2. Doctor	5.2	1.1	1-6	.2	1.4
3. Lawyer	5.8	1.0	1-6	.3	1.3
4. Engineer	5.5	1.1	1-6	.1	1.6
5. Scientist	5.7	1.0	1-6	.2	1.4
6. Businessman	5.3	1.1	1-6	.1	1.5
7. Farmer	4.8	1.2	1-6	-.2	1.6
8. Miner	4.2	1.3	1-6	-.3	1.7
9. Fisherman	4.0	1.4	1-6	-.4	1.8
10. Unemployed	3.5	1.5	1-6	-.5	1.9

Source: Data from the 1960 U.S. Census of Occupations, Table 1-1, U.S. Department of Commerce, Bureau of Economic Analysis, Washington, D.C., 1961.

Mean and standard deviation are based on a sample of 1,000 respondents who rated the prestige of various occupations on a scale of 1 to 6, where 1 is lowest and 6 is highest.

Skewness and kurtosis are based on the same sample of 1,000 respondents.

Range is the difference between the highest and lowest ratings for each occupation.

TABLE XL

PROPORTIONS, TOTALS, AND RANKINGS OF EDUCATION POSITIONS PRESTIGE RATINGS
(Raw Frequency Matrix converted to proportions, summed, and ranked)

Position (j)	Category Score ^a					Rank ^b Score	Rank (NORC Method)
	Very High	High	Aver- age	Somewhat Below Av.	Low		
1	1.6	39.0	25.8	2.7	0.0	69.0	28.5
2	0.0	5.0	25.4	16.8	1.9	49.1	57
3	48.7	35.6	3.1	0.0	0.3	87.7	7
4	1.6	23.5	30.5	6.9	0.2	62.6	42
5	7.3	31.8	27.0	2.5	0.3	69.0	28.5
6	1.6	3.8	22.6	15.7	3.4	47.0	60
7	6.8	33.5	26.4	1.9	0.5	69.1	26.5
8	3.1	26.0	27.6	5.9	0.7	63.4	40
9	30.4	44.0	7.2	1.0	0.0	82.6	10
10	29.3	32.7	14.1	1.9	0.3	78.3	14
11	0.0	3.7	33.3	14.0	0.9	52.0	56
12	1.0	15.5	36.4	6.9	0.3	60.2	46.5
13	8.4	48.6	17.0	1.0	0.0	75.0	17
14	77.0	12.1	2.5	1.3	0.1	93.0	4
15	2.1	16.8	42.1	2.7	0.0	63.7	38
16	5.8	34.8	26.1	2.5	0.2	69.3	24.5
17	55.5	30.6	3.1	0.4	0.0	89.6	6
18	21.5	52.8	6.9	0.4	0.0	81.6	11
19	6.8	40.2	22.9	1.7	0.1	71.7	20
20	74.3	18.0	1.3	4.1	0.0	94.0	3
21	3.1	33.1	29.8	2.3	0.0	68.4	32
22	2.1	16.3	33.9	7.3	0.5	60.2	46.5
23	1.0	16.8	39.6	4.6	0.1	62.1	43
24	0.0	5.9	44.9	6.5	0.3	57.6	51
25	3.7	36.0	26.1	2.7	0.2	68.7	31
26	3.7	23.9	30.2	6.3	0.1	64.1	37
27	15.2	48.2	13.8	0.4	0.1	77.7	15
28	3.7	20.9	33.0	5.9	0.1	63.6	39
29	8.4	33.5	28.6	0.8	0.0	71.3	21
30	0.0	13.0	35.5	9.4	0.2	58.1	49.5

^aCategory scores were calculated by dividing each element in Table IX by N (191), and then multiplying the obtained proportions in categories 1 to 5 ("very high" to "low") by 100, 80, 60, 40 and 20 respectively.

^bRank Scores are arithmetic sums of each row. Sums may not agree in the last figure due to rounding errors.

TABLE XL (Continued)

Position (j)	Category Score ^a					Rank ^b Score	Rank (NORC Method)
	Very High	High	Average	Somewhat Below Av.	Low		
31	3.1	28.5	30.5	4.2	0.0	66.3	35
32	0.5	21.4	30.2	7.7	0.6	60.4	45
33	22.0	50.3	8.1	0.6	0.0	81.0	12
34	36.6	44.0	5.0	0.0	0.0	85.7	8
35	63.4	25.5	1.9	0.4	0.1	91.3	5
36	1.0	17.6	29.2	9.2	1.0	58.1	49.5
37	2.1	37.7	27.6	1.9	0.0	69.3	24.5
38	80.1	12.1	1.5	0.4	0.2	94.5	2
39	8.4	33.9	26.4	2.1	0.0	70.8	22
40	0.0	8.4	40.2	8.2	0.4	57.2	52
41	1.6	11.7	25.1	13.8	1.5	53.7	55
42	90.6	3.8	2.2	0.2	0.1	96.9	1
43	1.0	3.4	25.8	15.3	2.7	48.2	58
44	2.1	35.2	30.2	1.3	0.1	68.8	30
45	1.0	31.8	33.0	1.7	0.0	67.5	34
46	4.7	34.7	26.7	2.9	0.0	69.1	26.5
47	15.7	51.5	11.3	0.4	0.0	79.0	13
48	0.5	24.3	36.8	2.9	0.1	64.6	36
49	33.5	41.0	8.1	0.6	0.0	83.4	9
50	5.2	34.3	28.3	1.9	0.0	69.7	23
51	0.5	8.4	34.9	10.7	0.8	59.6	48
52	2.1	13.0	38.0	5.7	0.8	59.6	48
53	14.7	47.7	14.5	0.4	0.1	77.4	16
54	0.5	4.6	22.0	19.1	1.9	48.1	59
55	2.1	18.0	39.6	3.4	0.2	63.2	41
56	3.1	27.6	36.1	0.8	0.0	67.7	33
57	1.6	9.6	45.5	4.2	0.0	60.9	44
58	8.9	41.5	21.7	1.3	0.0	73.3	18
59	8.4	41.0	19.8	2.7	0.1	72.0	19
60	5.2	5.4	41.5	8.2	0.6	56.2	53

^aCategory scores were calculated by dividing each element in Table IX by N (191), then multiplying the obtained proportions in categories 1 to 5 ("very high" to "low") by 100, 80, 60, 40, and 20 respectively.

^bRank scores are row sums. Sums may not agree in the last figure due to rounding errors.

TABLE XLI

CUMULATIVE FREQUENCY MATRIX OF EDUCATION POSITIONS PRESTIGE RATINGS^a

Position ^b (j)	Category (g)				
	1	2	3	4	5
1	3	96	178	191	191
2	0	12	93	173	191
3	93	178	188	188	191
4	3	59	156	189	191
5	14	90	176	188	191
6	3	12	84	159	191
7	13	93	177	186	191
8	6	68	156	184	191
9	58	163	186	191	191
10	56	134	179	188	191
11	0	9	115	182	191
12	2	39	155	188	191
13	16	132	186	191	191
14	147	176	184	190	191
15	4	44	178	191	191
16	11	94	177	189	191
17	106	179	189	191	191
18	41	167	189	191	191
19	13	109	182	190	191
20	142	185	189	191	191
21	6	85	180	191	191
22	4	43	151	186	191
23	2	42	168	190	191
24	0	14	157	188	191
25	7	93	176	189	191
26	7	64	160	190	191
27	29	144	188	190	191
28	7	57	162	190	191
29	16	96	187	191	191
30	0	31	144	189	191

^aThe element in the gth column and the jth row is the number of times each position in Table IX was sorted below the upper boundary of category g.

^bAs in Table IX, p. 101.

TABLE XLI (Continued)

Position ^a (j)	Category ^b (g)				
	1	2	3	4	5
31	6	74	171	191	191
32	1	52	148	185	191
33	42	162	188	191	191
34	70	175	191	191	191
35	121	182	188	190	191
36	2	44	137	181	191
37	4	94	182	191	191
38	153	182	187	189	191
39	16	97	181	191	191
40	0	20	148	187	191
41	3	31	111	177	191
42	173	182	189	190	191
43	2	10	92	165	191
44	4	88	184	190	191
45	2	78	183	191	191
46	9	92	177	191	191
47	30	153	189	191	191
48	1	59	176	190	191
49	64	162	188	191	191
50	10	92	182	191	191
51	1	21	132	183	191
52	4	35	156	183	191
53	28	142	188	190	191
54	1	12	82	173	191
55	4	47	173	189	191
56	6	72	187	191	191
57	3	26	171	191	191
58	17	116	185	191	191
59	16	114	177	190	191
60	1	14	146	185	191

^aPositions as in Table IX, p. 101.

^bThe element in the jth row and the gth column is the number of times each position in Table IX was sorted below the upper boundary of category g.

TABLE XLII

CUMULATIVE PROPORTION MATRIX OF EDUCATION POSITIONS PRESTIGE RATINGS

Position ^a (j)	Category ^b (g)				
	1	2	3	4	5
1	.0157	.5026	.9319	1.0000	1.0000
2	.0000	.0628	.4869	.9058	1.0000
3	.4869	.9319	.9843	.9843	1.0000
4	.0157	.3089	.8168	.9895	1.0000
5	.0733	.4712	.9215	.9843	1.0000
6	.0157	.0628	.4398	.8325	1.0000
7	.0681	.4869	.9267	.9738	1.0000
8	.0314	.3560	.8168	.9634	1.0000
9	.3037	.8534	.9738	1.0000	1.0000
10	.2932	.7016	.9372	.9843	1.0000
11	.0000	.0471	.6021	.9529	1.0000
12	.0105	.3042	.8115	.9843	1.0000
13	.0838	.6911	.9738	1.0000	1.0000
14	.7696	.9215	.9634	.9948	1.0000
15	.0209	.2304	.9319	1.0000	1.0000
16	.0576	.4921	.9267	.9895	1.0000
17	.5550	.9372	.9895	1.0000	1.0000
18	.2147	.8743	.9895	1.0000	1.0000
19	.0680	.5707	.9529	.9948	1.0000
20	.7435	.9686	.9895	1.0000	1.0000
21	.0314	.4450	.9424	1.0000	1.0000
22	.0209	.2251	.7906	.9738	1.0000
23	.0105	.2199	.8796	.9948	1.0000
24	.0000	.0733	.8220	.9843	1.0000
25	.0366	.4869	.9215	.9895	1.0000
26	.0366	.3351	.8377	.9948	1.0000
27	.1518	.7539	.9843	.9948	1.0000
28	.0366	.2984	.8482	.9948	1.0000
29	.0838	.5026	.9791	1.0000	1.0000
30	.0000	.1623	.7539	.9895	1.0000

^aNumbers represent positions in Table IX, p. 101.

^bThe element in the *j*th row and the *g*th column is the proportion of times each position was sorted below the *g*th category boundary; i.e., elements in Table XLI multiplied by the reciprocal of N (1/191).

TABLE XLII (Continued)

Position ^a (j)	Category ^b (g)				
	1	2	3	4	5
31	.0314	.3874	.8953	1.0000	1.0000
32	.0052	.2723	.7749	.9686	1.0000
33	.2199	.8482	.9843	1.0000	1.0000
34	.3665	.9162	1.0000	1.0000	1.0000
35	.6335	.9529	.9843	.9948	1.0000
36	.0105	.2304	.7173	.9476	1.0000
37	.0209	.4921	.9529	1.0000	1.0000
38	.8010	.9529	.9791	.9895	1.0000
39	.0838	.5076	.9476	1.0000	1.0000
40	.0000	.1047	.7749	.9791	1.0000
41	.0157	.1623	.5812	.9267	1.0000
42	.9058	.9529	.9895	.9948	1.0000
43	.0105	.0524	.4817	.8639	1.0000
44	.0209	.46-7	.9634	.9948	1.0000
45	.0105	.4084	.9581	1.0000	1.0000
46	.0471	.4817	.9267	1.0000	1.0000
47	.1571	.8010	.9895	1.0000	1.0000
48	.0052	.3089	.9215	.9948	1.0000
49	.3351	.8482	.9843	1.0000	1.0000
50	.0524	.4817	.9529	1.0000	1.0000
51	.0052	.1099	.6911	.9581	1.0000
52	.0209	.1832	.8168	.9581	1.0000
53	.1466	.7435	.9843	.9948	1.0000
54	.0052	.0628	.4293	.9058	1.0000
55	.0209	.2461	.9058	.9895	1.0000
56	.0314	.3770	.9791	1.0000	1.0000
57	.0157	.1361	.8952	1.0000	1.0000
58	.0890	.6073	.9686	1.0000	1.0000
59	.0838	.5969	.9267	.9948	1.0000
60	.0052	.0733	.7644	.9686	1.0000

^aNumbers in column I represent positions in Table IX, p. 101.

^bThe element in the jth row and the gth column is the proportion of times each position was sorted below the gth category boundary; i.e., elements in Table XLI multiplied by the reciprocal of N (1/191).

TABLE XLIII

MATRIX OF TRANSFORMATIONS OF EDUCATION POSITIONS PRESTIGE RATINGS
TO THE NORMAL DISTRIBUTION CURVE

Position ^a (j)	Category ^b (g)			
	1	2	3	4
1	-2.151	.0066	1.490	c
2	c	-1.531	-.0328	1.315
3	-.0328	1.490	2.152	2.152
4	-2.151	-.4990	.9031	2.309
5	-1.452	-.0722	1.415	2.152
6	-2.151	-1.531	-.1515	.9639
7	-1.490	-.0328	1.452	1.940
8	-1.860	-.3691	.9031	1.786
9	-.5139	1.051	1.940	c
10	-.5441	.5289	1.531	2.152
11	c	-1.673	.2588	1.673
12	-2.309	-.8268	.8835	2.152
13	-1.380	.4990	1.940	c
14	.7376	1.415	1.786	2.560
15	-2.035	-.7376	1.490	c
16	-1.575	-.1981	1.452	2.309
17	.1382	1.531	2.309	c
18	-.7904	1.147	2.309	c
19	-1.490	.1781	1.673	2.560
20	.6540	1.860	2.309	c
21	-1.860	-.1382	1.575	c
22	-2.035	-.7550	.8084	1.940
23	-2.309	-.7725	1.173	2.560
24	c	-1.452	.9230	2.152
25	-1.791	-.0328	1.415	2.309
26	-1.791	-.4259	.9850	2.560
27	-1.209	.6869	2.152	2.560
28	-1.791	-.5289	1.029	2.560
29	-1.380	.0066	2.035	c
30	c	-.9850	.6869	2.309

^aNumbers represent positions in Table IX, p. 101.

^bThe element in the *j*th row and the *g*th column is the unit normal deviate corresponding to the elements of the Cumulative Proportion Matrix (Table XLII). Thus, elements are negative for all proportions below 0.5000 and positive for all above 0.5000 (accurate to four figures).

^cAny cells of the Cumulative Proportion Matrix that contain proportions of zero or unity cannot be transformed to normal curve values (plus or minus infinity) and so are left blank. For this reason, category 5 (all elements being plus infinity) has been omitted.

TABLE XLIII (Continued)

Position ^a (j)	Category ^b (g)			
	1	2	3	4
31	-1.860	- .2860	1.254	c
32	-2.560	- .6060	.7550	c
33	- .7725	1.029	2.152	c
34	- .3411	1.380	c	c
35	.3411	1.673	2.152	2.560
36	-2.309	- .7376	.5748	1.622
37	-2.035	- .1981	1.673	c
38	.8469	1.673	2.035	2.309
39	-1.380	.0197	1.622	c
40	c	-1.254	.7550	2.035
41	-2.151	- .9850	.2048	1.452
42	1.315	1.673	2.309	2.560
43	-2.309	-1.622	- .0459	1.098
44	-2.035	- .0986	1.786	2.560
45	-2.309	- .2317	1.729	c
46	-1.673	- .0459	1.452	c
47	-2.151	.8469	2.309	c
48	-2.560	- .4990	1.415	2.560
49	- .4259	1.029	2.152	c
50	-1.622	- .0459	1.673	c
51	-2.560	-1.227	.4990	1.729
52	-2.035	- .9031	.9031	1.729
53	-1.051	.6540	2.152	2.560
54	-2.560	-1.531	- .1781	1.315
55	-2.035	- .6869	1.315	2.309
56	-1.860	- .3135	2.035	c
57	-2.151	-1.098	1.254	c
58	-1.347	.2724	1.860	c
59	-1.380	.2452	1.452	2.560
60	-2.560	-1.451	.7205	1.860

^aNumbers represent positions in Table IX, p. 101.

^bThe element in the *j*th row and the *g*th column is the unit normal deviate corresponding to the elements of the Cumulative Proportion Matrix (Table XLII). Thus, elements are negative for all proportions below 0.5000, and positive for all elements above 0.5000 (accurate to four figures).

^cCells in the Cumulative Proportion Matrix (Table XLII) that contain proportions of zero or unity cannot be transformed to normal curve values (minus or plus infinity) and are therefore left blank. For this reason category 5 (all elements plus infinity) has been omitted.

TABLE XLIV
MATRIX OF SCALE VALUES FOR EDUCATION POSITIONS
(Torgerson-Thurstone Method)

Position Number	Differences Between Mean Category Boundary and Normal Curve Values					Scale Value ^a	Rank	Rank (NORC Method)
	1	2	3	4	Row Sum			
20	-.6540	-.3815	.6553	b	-.3802	-.1267	1	3
42	-1.3150	-.1945	.6553	1.3752	.5210	.1303	2	1
17	-.1382	-.0525	.6553	b	.4646	.1549	3	6
34	.3411	.0985	b	b	.4396	.2198	4	8
38	-.8469	-.1945	.9293	1.6262	1.5141	.3785	5	2
35	-.3411	-.1945	.8123	1.3752	1.6519	.4130	6	5
14	-.7376	.0635	1.1783	1.3752	1.8794	.4699	7	4
49	.4259	.4495	.8123	b	1.6877	.5626	8	9
18	.7904	.3315	.6553	b	1.7772	.5924	9	11
3	.0328	-.0115	.8123	1.7832	2.6168	.6542	10	7
9	.5139	.4275	1.0243	b	1.9657	.6552	11	10
33	.7725	.4495	.8123	b	2.0343	.6781	12	12
27	1.0290	.7916	.8123	1.3752	4.0081	1.0020	13	15
53	1.0510	.8245	.8123	1.3752	4.0630	1.0158	14	16
13	1.3800	.9795	1.0243	b	3.3838	1.1279	15	17
47	2.1510	.6316	.6553	b	3.4379	1.1460	16	13
10	.5441	.9496	1.4333	1.7832	4.7102	1.1776	17	14
58	1.3470	1.2061	1.1043	b	3.6574	1.2191	18	18
29	1.3800	1.4719	.9293	b	3.7812	1.2604	19	21
19	1.4900	1.3004	1.2913	1.3752	5.4569	1.3642	20	20
59	1.3800	1.2333	1.5123	1.3752	5.5008	1.3752	21	19
39	1.3800	1.4588	1.3423	b	4.1811	1.3937	22	22
50	1.6220	1.5244	1.2913	b	4.4377	1.4792	23	23
56	1.8600	1.7920	.9293	b	4.5813	1.5271	24	33
44	2.0350	1.5771	1.1783	1.3752	6.1656	1.5414	25	30
46	1.6730	1.5244	1.5123	b	4.7097	1.5699	26	26.5
5	1.4520	1.5507	1.5493	1.7832	6.3352	1.5838	27	28.5
16	1.5750	1.6766	1.5123	1.6262	6.3901	1.5975	28	24.5
25	1.7910	1.5113	1.5493	1.6262	6.4778	1.6195	29	31
21	1.8600	1.6167	1.3893	b	4.8860	1.6220	30	32
7	1.4900	1.5113	1.5123	1.9952	6.5088	1.6272	31	26.5
37	2.0350	1.6766	1.2913	b	5.0029	1.6676	32	24.5

^aRow sum divided by the number of non-zero elements in the row.

^bVacant cells.

TABLE XLIV (Continued)

Position Number	1	2	3	4	Row Sum	Scale Value ^a	Rank	Rank (NORC METHOD)
1	2.1510	1.4719	1.4743	b	5.0972	1.6991	33	28.5
45	2.3090	1.7102	1.2353	b	5.2545	1.7515	34	34
26	1.7910	1.9044	1.9793	1.3752	7.0499	1.7625	35	37
28	1.7910	2.0074	1.9353	1.3752	7.1089	1.7772	36	39
31	1.8600	1.7645	1.7103	b	5.3348	1.7782	37	35
48	2.5600	1.9775	1.5493	1.3753	7.4620	1.8655	38	36
55	2.0350	2.1654	1.6493	1.6262	7.4759	1.8690	39	41
15	2.0350	2.2161	1.4743	b	5.7254	1.9084	40	38
23	2.3090	2.2510	1.7913	1.3752	7.7265	1.9316	41	43
4	2.1510	1.9775	2.0612	1.6262	7.8159	1.9540	42	42
8	1.8600	1.8476	2.0612	2.1492	7.9180	1.9795	43	40
22	2.0350	2.2335	2.1559	1.9952	8.4196	2.1049	44	46.5
12	2.3090	2.3053	2.0808	1.7832	8.4783	2.1196	45	46.5
30	b	2.4635	2.2774	1.6262	6.3671	2.1223	46	49.5
57	2.1510	2.5765	1.7103	b	6.4378	2.1459	47	44
32	2.5600	2.0845	2.2093	2.0752	8.9290	2.2323	48	45
24	b	2.9305	2.0413	1.7832	6.7550	2.2516	49	51
40	b	2.7325	2.2093	1.9002	6.8420	2.2806	50	52
36	2.3090	2.2161	2.3895	2.3130	9.2276	2.3069	51	49.5
52	2.0350	2.3816	2.0612	2.7623	9.2401	2.3100	52	48
60	2.5600	2.9295	2.2438	2.0752	9.8085	2.4521	53	53
41	2.1510	2.4635	2.7595	2.4832	9.8572	2.4643	54	55
51	2.5600	2.7055	2.4653	2.2062	9.9370	2.4843	55	54
11	b	3.1515	2.7055	2.2622	8.1193	2.7064	56	56
6	2.1510	3.0095	3.1158	2.9713	11.2476	2.8119	57	60
43	2.3090	3.1005	3.0102	2.8372	11.2569	2.8142	58	58
54	2.5600	3.0095	3.1424	2.6202	11.3321	2.8330	59	59
2	b	3.0095	2.9971	2.6202	8.6268	2.8756	60	57

Spearman's rho between ranks987 Significance . Beyond .00001

^aRow sums divided by the number of non-zero elements in the row.

^bVacant cells

B29842